THE AMERICAN NEPTUNE

A QUARTERLY JOURNAL OF MARITIME HISTORY

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County of Essex }

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(My commission expires January 27, 1962.)

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THE AMERICAN NEPTUNE

A Quarterly Journal *of Maritime History*

VOLUME XVII JANUARY 1957 NUMBER 1

SELDOM *do we have occasion to welcome a new maritime museum to the small, rather closely knit, group of such institutions. This is, then, a rare opportunity to congratulate Mr. Henry B. Kendall on the near completion of his museum.*

In the woods of Sharon, a scant half hour's motoring south from Boston and a mile off U. S. Route 1, Mr. Kendall has developed a museum devoted exclusively to whaling. Here he is exhibiting for the first time the enormous collection of material relating to his favorite subject, which he has accumulated over a period of forty years.

The eight rooms of exhibits in a renovated fireproof building have been installed under the supervision of Marion V. Brewington, Assistant Director of the Peabody Museum of Salem. Mr. Brewington has also had charge of the building reconstruction and he is in the process of compiling a catalogue of the entire collection.

One large room is devoted to showing the last completely outfitted whaleboat used in New Bedford along with full-sized tryworks and cutting-in stage. Nearby are what is probably the most complete series of harpoons, lances, and other whaling gear in any collection. The tools of such artisans as the sailmaker, cooper, carpenter, caulker and guager are displayed in a separate room. The superb scrimshaw collection has two special, well-lighted rooms. Another large gallery is devoted to American paintings and prints of whaling subjects, while a smaller room is given over to those of foreign origin.

Among the original paintings are works by the well-known New Bedford artists, Benjamin Russell and C. S. Raleigh, and, in another class, the Dutch masters, Van der Velde and Bakhuizen. Nearly all the familiar whaling prints are included in the collection which is rich in rare and unique pieces.

No date for the opening of this museum has as yet been announced but already it is a magnificent monument to whaling, and a credit to Mr. Kendall's collecting industry and acumen.

Another development in the field of collections relating to maritime history is an agreement recently reached between the Bostonian Society and the Peabody Museum of Salem.

About a decade ago the Bostonian Society inherited from the now defunct Boston Marine Museum the maritime collections in the front room of the Old State House. The collections, while heavily weighted with Boston material, are of a general nature and very crowded in the cramped quarters. By virtue of this agreement the general material is being moved to Salem and members of the Peabody Museum staff will install an exhibition, in the redecorated room, relating strictly to the maritime history of Boston. The Old State House collection contains many outstanding Boston items and these will be augmented by Boston material from the Peabody Museum's collections.

The work is now underway and it is hoped to be able to open the new display in the Old State House by May 1. This coöperative venture is one more example of the new enlightened policy becoming more general in museum circles and should be a great benefit to both institutions.

ERNEST S. DODGE

Peabody Museum of Salem

Johnny Woodboat

BY GEORGE MacBEATH

ONE hundred years ago the St. John River was teeming with a peculiar type of craft called the woodboat. Today not a single woodboat plies the river nor indeed can the remains of one be found along its shores. They have completely disappeared. They were part of the scene for so long and died so peacefully that New Brunswickers seldom think of them in terms of historical data. I was no exception; it took an outsider—Colonel Howard Chapelle—to make me realize the importance of this distinctly local craft. Intrigued with the subject, I spent many pleasant hours searching the records, talking with the people who remember these boats and poring over pictures and plans. As the pieces of the puzzle were put together, the picture of a lovable old workhorse that was very much a part of a life that is no more began to emerge. Here was an unsual craft that was of great economic importance during the last century, and a craft that has a connection with the early schooner types.

Of the theories advanced as to the woodboat's origin, the one most often heard is that it originated on the St. John, the place where it was most used. This claim can be accepted for the boat's final development, but both the rig and the hull of the late eighteenth-century models were based closely on the pre-Revolutionary 'Two Mast Boat' to be found farther south. These craft themselves were special adaptations of English craft of the seventeenth century to the new conditions found along the Atlantic.

One of these colonial types was the Chebacco dogbody, a small, two-masted, gaff-rigged open boat without headsails which became popular in Massachusetts after 1750. Such a craft would be familiar to the trading company of Simonds, Hazen and White who had established themselves at the mouth of the St. John in 1764 and carried on trade with New England. It is quite possible that it was this vessel that they had in mind when in November 1783 they determined to build two boats to bring wood to market. Each boat was to be undecked, carry a crew of two, and have a

capacity of about eight cords.[1] But from present records it is impossible to describe the hull and form of these first woodboats, which must have averaged about fifteen tons. However, one thing points clearly to the fact that they were modeled after the Chebacco dogbody: the sailboats which brought wood and country produce to Saint John during the early nineteenth century were known as Chebacco boats.[2]

With the rapid settlement of the St. John River valley by the Loyalists after 1783 there was a great need for boats. Almost every farmer within reach of the water required the use of a versatile craft that would carry cordwood and country produce to the ready market at Saint John and bring back lime, ashes, and manufactured goods for his use. It is highly probable that those among the Loyalists who had been boatbuilders responded to this need and began constructing improved models of the Simonds, Hazen and White boat. The result was indeed a successful one, since the boats that they built were among the chief factors in the development of this part of New Brunswick in its early years.[3] Serving primarily as a river cargo carrier, the woodboats, as they came to be known, proved so superior that no other conveyance was able to compete with them until nearly the middle of the nineteenth century.

With the experience gained in constructing these early woodboats, the builders began to make changes and there gradually emerged a craft better adapted to local needs and quite different from the early boat. It is for this reason that some consideration can be given to the claim that the woodboat is a distinct local type. That she is worthy of greater interest than she has received is unquestionable, especially in view of the fact that the woodboat was one of the last survivors of the shallop rig which ceased to be common early in the nineteenth century. The craft survived here because it was admirably suited to its peculiar situation.

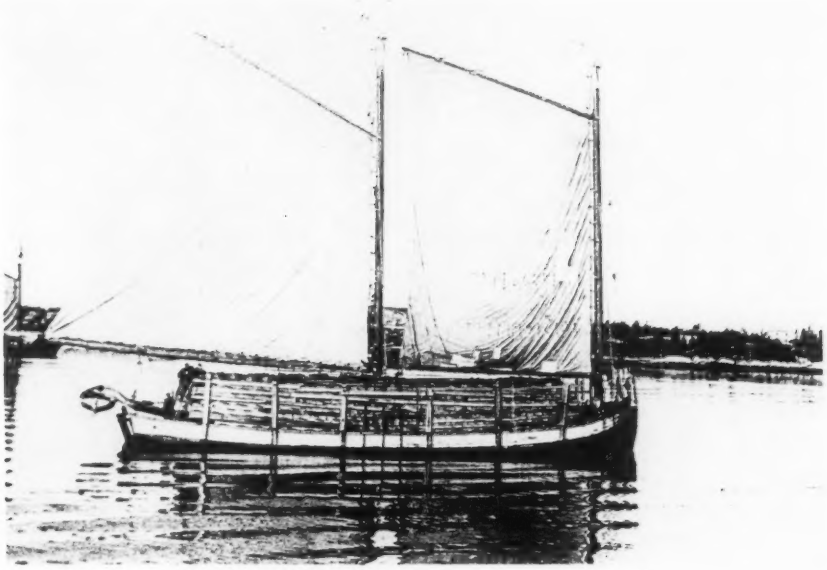
Exactly when the true woodboat form was established is impossible to determine.[4] Between 1783 and 1815 there were a number of developments of which we are certain. There was an increase in size, the 1815 tonnage being twice that of the wood carrier of 1783. A lithograph of Saint John Harbour in 1815 shows the woodboat of the period to be a longish craft, rather similar in appearance to the Hudson River boats and much less chunky than the Chebacco boat. Between 1815 and 1825,

1 Hazen Papers, The New Brunswick Museum.

2 *Acadiensis*, III, No. 4 (Saint John, 1903), 275.

3 Until less than 150 years ago there was an almost complete absence of roads in the Province and it was apparent to settlers of those days that water must primarily be depended upon for communications.

4 The earliest reference I have to them by the name 'woodboat' is in a pamphlet printed in 1812, but the term was almost certainly used earlier.



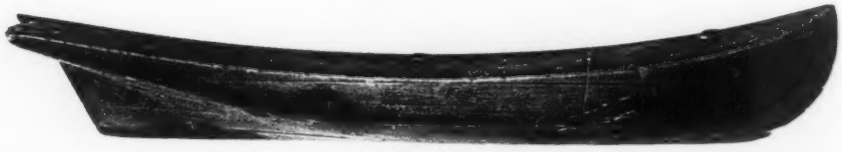
Common woodboat carrying a moderate load.

Courtesy of the Peabody Museum of Salem

Typical woodboat off the New England coast. The number of coastal woodboats without headgear was probably small.

Courtesy of the Peabody Museum of Salem

Woodboat model in the Marine Gallery, New Brunswick Museum. Length over all is eighteen and one half inches, width is six and one half inches; scale one quarter inch equals one foot.



Builder's model for the last woodboat constructed at Victoria Wharf on the St. John River. It measures thirty by five inches; scale one half inch equals one foot.

Courtesy of the New Brunswick Museum

the size of the woodboat doubled, breadth had increased in relation to depth, and it would appear that by 1830 a distinct type of craft called the St. John River woodboat had been established.

What did the woodboat look like? It some ways this is a difficult question to answer. Each builder seems to have had his own ideas, the result being great variety in form and quality of workmanship. Another difficulty is the range in size of these boats. Records show that they ran between eleven and ninety-seven tons.[5] In the matter of dimensions, length varied from 36 to 84 feet, depth from 4 feet to 7.9 feet, and breadth from 13.8 feet to 27 feet. The average, however, was somewhere around seventy tons. The dimensions of *Lida Gretta* are more or less typical. She measured 68 tons, had a length of 71 feet, a breadth of 25 feet, and a depth of hold of 6.5 feet.

The hull of these picturesque craft was constructed with carvel planking. The bow was full, with a stout, curved stem often shaped with much tumble home above the water line. The bulldog bow gave maximum cargo space at a sacrifice to speed; but this was not an important consideration since they were not designed to carry perishable cargoes. It was also found that this type of bow prevented deep plunging and caused the boat to lift quickly in a heavy sea. This buoyancy was due to the fact that the resistance was all in the bow; almost all the boats had a pretty midsection and aft end.

The heavily sheared hull was usually a somewhat shallow keel model with very little dead rise. They varied greatly in the matter of run; some had a very fine, rather long run; more seem to have had a short, full run. Apparently, there was no standard.

There was no overhang aft, although in a few of the later models the counter stern was to be found. The stern was cut off, usually with a raking transom like the stern of a modern dinghy. The exposed sternpost had a utilitarian 'outdoor' rudder attached. George Wasson in his excellent *Sailing Days on the Penobscot* states that this type of stern and the general 'chunky' look of the boat brought about this imaginary conversation between two skippers:

> 'Where's the other one?'
>
> 'What other one?'
>
> 'Why, the one they turned to and sawed that one off'n.'

The common type of steering gear, especially for those used exclusively on the river, was a tiller attached directly to the sternpost. The tiller often

[5] Tonnage figures are the registered tonnages unless otherwise specified.

ran to seven feet in length.[6] A local resident told me about being in a woodboat at Evandale one night and hearing music coming over the water. He called one of the crew who agreed that it was indeed music. In a few minutes another woodboat sailed past. Seated sideways on the tiller was the captain, a fiddle tucked under his chin and giving forth with some ditty like 'Turkey in the Straw.' He was able to change course by simply walking backward or forward, and didn't need to miss a note!

A word should be said on the anchor. For many years, the common type was wooden, being simply two huge pieces of curved wood set at right angles to one another and securely pinned. A large rock held in place by 'withes,' or twisted saplings, was placed in the center of the curved timbers. A hemp hawser served as anchor chain.

These boats were all rigged with two masts. The foremast was three feet or less from the stem and the taller mainmast amidships or slightly abaft amidships. Being stepped as far forward as possible, the foremast took the place of a headsail. This helped the boat head off the wind, and would steady it and prevent yawing when the wind was from the quarter. The tongue-in-cheek reason given by George Wasson for the absence of headsail is that 'they often loaded wood in such remote sylvan spots that bowsprits were too likely to get mixed up with trees on the steep banks!'[7] The truth of the matter is that with the towering deckloads they often carried it would have been awkward to work the jib.

The rigging was simple. The fore and mainsails were hooped to the masts, the foresail being almost as large as the main. The foremast boom was on the average only a foot longer than the gaff. It was not unusual to find a main boom that ran up to sixty-four feet in length, or to have a main gaff made from a large tree. A woodboat of forty tons carried about 1,700 square feet of canvas, usually managed by a two-man crew. Neither the main nor the foremast had stays so that the crew had to use the hoops or shinny up the mast if it were necessary to go aloft. There was the odd boat, however, that used the boatswain's chair. The gaffs, especially that of the foremast, had little peak when hoisted. The shape of the foresail was 'barn door,' or square. In the early days the sails were treated with ocher, giving them a dull red or brick color. It was felt that this treatment would protect them, but there was no proof that it actually did and for the most part the practice died out.

This rig proved to be handy in crowded waters and could be worked

[6] Boats built toward the end of the century were almost all equipped with a wheel. It was mounted on a wooden tiller and the whole worked like a windlass from steering lines leading from the drum to the rail.

[7] George S. Wasson, *Sailing Days on the Penobscot* (New York, 1949), p. 221.

by a small crew. Moreover, it enabled woodboats to navigate the long and sometimes treacherous tributaries under sail power alone. The rig also contributed to make the woodboats better than average sailers. With a stiff wind and reasonably calm water, and winged out,[8] they were able to make between nine and ten knots on the river. An even better speed was sometimes achieved by these workhorses in the Bay of Fundy. Speaking of their speed, it is related that *Comrade* once beat a Boston pilot boat in a race up the harbor of that port. The pilots were so impressed that they tried to persuade the woodboat captain to put his boat in dry dock at their expense to give them a chance to study her underwater lines.[9]

Most of the owners saw no sense in spending money for looks alone and no figurehead, no bow badges, no decoration of any kind was to be found. For years, tar and pitch served as paint which was considered to be a needless luxury. When paint finally did come into use, the hull was nearly always painted black and the railing or bulwarks another or a combination of contrasting colors. To my knowledge, however, the woodboatmen never developed the passion for paint and gaudy colors for which their deep-sea brethren were noted.

The usual plan of the flush deck was simple. Right abaft the foremast was the old handspike wooden windlass, although it was sometimes to be found in the space between the foremast and the stem. It was a primitive arrangement, a drum with a hand-operated lever at both ends which was worked with a see-saw motion. At least two strokes, two up and two down, were required to bring in a link in the anchor chain.

Just aft of the windlass on the center line was a small hatch for storage in the forepeak room. Amidships there was a large rectangular hatch, and one or two pumps with wooden barrels abaft the mainmast. A large, rather high cabin trunk, with a cabin slide to port of center line, was placed at the stern. This lead to the cabin which was aft under the deck and had space for three men. There was no regular plan for this dingy and stuffy cuddy, made all the more uninhabitable by the smoke from the brick fireplace used for cooking and heating. The wheel or tiller was close abaft the trunk. A yawl or jolly boat was hung on clumsy wood davits, although many of the woodboats used exclusively on the river were not equipped with davits and simply towed their tenders. On the early vessels the rail was open and stopped at the after end of the main hatch. Solid bulwarks were uncommon if not unknown, being consid-

[8] 'Wung out,' to use the expression of the crews of the woodboats, meant having one sail swung out to starboard, the other to port.

[9] Recounted by William Holder, an octogenarian and a well-known sailmaker of Saint John.

ered dangerous in a small craft. Of course, solid bulwarks were to be seen on the majority of the later boats. These were about two and one-half feet in height. There was usually a large break in the rail amidships at the main hatch.

Their low sides made it comparatively easy to pass wood by hand over the railings. Due to the moderate dead rise and bilge keels the craft were able when grounded on the shore to sit upright, a necessary position for convenient loading and unloading. This was an important consideration since the boats had to cope with Saint John's thirty-foot tides which leave many of the slips dry at low water. Other features in their favor were that they could carry large loads in very shallow water and were usually smart sailers. The story is related of how a captain sailed his boat into the crowded waters of Market Slip, Saint John, and left instructions with the mate to 'Just jolly her around until I get back.'

Some of the woodboats were skilfully built of the best materials. It is quite evident from the records, however, that more were rough and primitive in construction, being most often built of odds and ends. As a class, they won the dubious distinction from some authorities of being the least expensive vessel, ton for ton, ever built on this side of the Atlantic.[10] Yet there is no question about their popularity and their importance in the economic life of the Province during the last century.

The St. John River woodboats received their name apparently from the fact that they were built almost exclusively on the lower St. John River and its tributaries. There are records of a few being built elsewhere but these are rare indeed when the total number of woodboats built in the last century is considered. Yards were located at Moss Glen, Long Reach, Holderville, Victoria Wharf, Whelpley's Point, Greenwich, Oak Point, the Belleisle, the Washademoak, Jemseg, and Grand Lake, to name but the more important. Although Grand Lake was the one considerable boatbuilding center in the lower St. John River valley, it is Harvey Whelpley of Whelpley's Point who is credited with having constructed more woodboats in his yard than any other builder.[11]

Many of the boats were built by farmers in winter to keep themselves and their hired hands busy. It was not unusual to find a boat built, sailed and owned by the same man. The vast majority were owned either by farmers or lumber merchants.

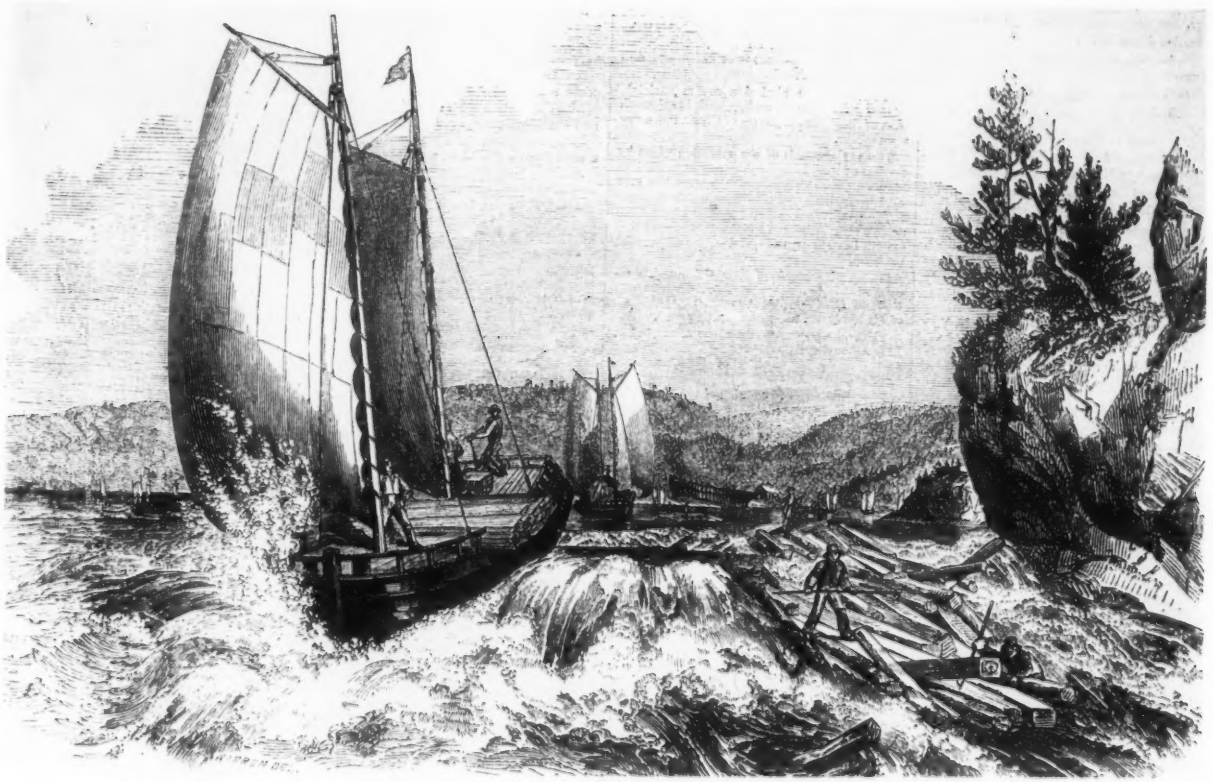
The first step in constructing a woodboat was to cut the lumber. Very

[10] George S. Wasson, op. cit.

[11] It was felt to be of no vital importance in this study to list the name and particulars of every such craft known to have been launched. It might be well to point out however that much of this information is now on file at the New Brunswick Museum.

Woodboat unloading cord wood at Market Slip, Saint John. They were quite flat on the bottom and equipped with bilge keels, allowing them to sit upright when loaded.

Courtesy of the New Brunswick Museum



'View at the Falls of the St. John River, New Brunswick.'

From the engraving which appeared in *Gleason's Pictorial Drawing-Room Companion* for 27 March 1852.

often this was to be found on the land of the builder, within a half mile or so of the shore where the vessel was to be built. The timber for planking was mill sawn or more often, at least until 1875, whip sawn or hand hewn on the spot. Many preferred hand-hewn timber, believing it closed the pores of the wood. Two or three farmers living near the Devil's Back on the St. John built a woodboat some distance inland. Then they tore it apart and carried it to the river where it was reconstructed. This ingenious plan was followed to save cartage!

The regular 'yard' was simply a cleared, leveled space on the shore where a platform of planks had been laid. The keel, stem, sternpost and ribs would then be raised on the platform. The pattern of construction was that employed in building seagoing vessels.

A master builder or experienced foreman was usually engaged to oversee construction, at least in its early stage. But there was more than one case of complete novices building such a boat. I was told recently of one such person who decided to build. He fashioned the model without difficulty, but was at a loss as to how to take off the lines. He solved the problem by imprinting the model in the deep snow and got his lines by placing shingles in the impression.

As the manner of building varied, so did the kinds of lumber used. These included birch, beech, maple, oak, pine, spruce, hackmatack, and elm. They seem only to have drawn the line with poplar, which was termed 'good for nothing.' The better constructed woodboats were planked below the water line with birch or some other hardwood, and with spruce above, as well as for the deck. The deck planking was usually cut first and put on last so that it would be well seasoned. Hackmatack was used for knees, keel, keelson, stem, stern, and stanchions, and white pine for the masts. The poorer boats were built almost wholly of spruce.

In the early days, no model of any kind was used. The builder relied on 'rule of thumb' or trial and error in building. They were later almost wholly built from a model or half model designed by the master builder. There is no record of paper plans ever having been used in building a woodboat.

The planking was held in place by wooden pins or trunnels made of birch or hackmatack. Oakum, of course, was the common caulking used, but it is related that the early builder found cow dung just as good. I am told that on more than one occasion a builder found such large gaps between the planks that he had to insert gads or wedges before caulking.

Some of these woodboats were so rough and primitive in construction

as to be veritable curiosities of shipbuilding. 'Some enterprising soul once put an extreme specimen on exhibition at a Boston wharf. For ten cents were to be seen crude and even startling make-shifts of every description. It was easy to believe that the unique craft grew far inland, as a distinctly bucolic touch was given by an anchor which had flukes consisting of plough-shares, fastened on by wire lashings, while the stock was simply a limb of yellow birch to which bark still adhered. In this strange outfit the skipper who built it, together with his wife, were no small part of the show and the wonder grew that Boston was ever reached.'[12]

Since the majority were crudely constructed and since they received much rough handling in the many uses to which they were put they did not prove to be very durable. What with the devastating effect of being afloat in fresh water, plus the fact that they were not always tight and usually had cuts in the planking and poor spots in the seams, many of them were unfit to put to sea. Indeed, afloat at any time the pumps had to be kept going constantly. There are records to show that some were kept afloat simply by the buoyancy of the cargo they carried. The skipper of one woodboat once admitted that in ten years it was time to junk the best of them.

Yet there are dozens of boats whose long careers disprove this generalization. The thirty-one-ton *Favorite* was built in 1816 and operated on the river for over nineteen years. Another of the early boats, *Salmon River*, was built in 1814 and operated for about thirty-four years. David Coombes built the sixty-four-ton *Guitar* at Greenwich in 1853, and she wasn't broken up until 1883. *Marysville*, seventy-eight tons, was built at Westfield in 1869 and not pronounced 'unseaworthy' until 1907. But the record for long life must go to the sixty-nine-ton *Sea Bird*. She enjoyed a career of forty-four years, from 1868 to 1912. On the other hand, the forty-seven-ton *Dolphin* was built in 1838 and condemned and broken up in 1844, a period of only six years.

Only eleven woodboats were built during the 1820's, but eighty-one were launched in the 30's. The total then began to decline: seventy-one in the 40's, seventy-three in the 50's, sixty-nine in the 60's, fifty-nine in the 70's, twenty-four in the 80's, fourteen in the 90's, and only six between 1900 and 1917.[13]

J. A. H. was the last woodboat to be built. Constructed during the winter of 1917, she registered fifty-six tons. She was rebuilt the following year and equipped with a gasoline motor. This is the only instance re-

[12] Wasson, p. 222.

[13] Official records prior to 1820 were not available.

corded of a woodboat being equipped with motor. Happily, they died out in time to escape this fate. The last woodboat on the river was condemned and broken up at Indiantown, Saint John, in December 1930. She was the fifty-one-ton *Maggie Alice*, built in 1897.

The St. John River woodboat in its final form was designed to carry wood on the river. Indeed, the majority were operated as lighters in the lumber business on the St. John River. However, they were put to other uses.

They conveyed deals from the hundreds of water-powered sawmills to the port of Saint John where they were reloaded on deep-sea vessels for the overseas market. The cargoes of ten or twelve woodboats were required to fill one of the square-riggers. The woodboat would be tied up at the bow of the ship and the deals loaded directly through the timber ports.

There was also a constant demand for their services in carrying timbers, planks, knees, and so forth, to the many shipyards at the mouth of the river. It was customary for many of the farmers on the lower part of the river to use their spare time during the winter months to cut these materials for shipbuilding on their property. As spring approached teams of oxen would haul the lumber to the shore of the lake or the river where it would be loaded on the woodboat for transportation to Saint John.

Still others brought cordwood down river to be used to heat the homes of the residents of Saint John. Most of the woodboats carrying this type of cargo were beached in Market Slip and the stove wood piled in two-wheeled carts. Market Slip was the popular congregating place for the odd-job men who were looking for work. Some of these men waited around with bucksaws and when a cart loaded with wood pulled away from the Slip they would follow it to its destination in the hope of getting the job of cutting the wood into stove lengths for the purchaser.

Woodboats were also extensively used to carry coal from the Minto and Newcastle fields to Saint John and Fredericton, some of it to be reloaded into ships at Saint John. The coal for many years was loaded aboard the woodboats by means of wheelbarrows. Those woodboats carrying coal destined for Saint John were usually beached at York Slip where the McCormack and Zatzman fish establishment is now located. Two-wheeled dumpcarts would be drawn up alongside the woodboat and a plank run from the cart to the break in the rail, then wheelbarrows were used to do the unloading. Most of the coal used in Saint John was sold to the blacksmiths.

Mention must be made, too, of the staggering deckloads of hay which

these boats carried on the river. These loads of hay were often so high that the man at the helm could not see over them and on occasion was directed by shouted orders from forward.

The woodboat became widely known through the coastal trade. In this use it served principally to carry kiln wood to the limekilns at Rockland, Camden, Rockport, and Thomaston. The wood, cut in four-foot lengths, was purchased by the captains at various places along the river at $1.50 a cord and sold at a limekiln for $5.00 a cord. These limekilns which dotted the Maine coast during the last century used approximately thirty cords of wood at each burning with the result that there was a constant demand for wood. Due to the comparatively short run, the woodboats were able to carry towering deckloads. As with hay, these loads were sometimes so high that the helmsman had to be directed by another member of the crew stationed on the top of the load. The favorite practice was to load the vessel until she was deck to. In fact, very often, they were so deeply loaded that water stood several inches deep across the deck amidships. Although there was always a constant risk of losing the deckload in a rough sea, there was little danger of the craft sinking even should a serious leak develop since the buoyancy of the cargo would keep her afloat. Some of these farmers in the Rockland trade had only a hand compass and an almanac, which gave course from buoy to buoy, as navigational aids.

This seems a good point to note that back in 1812, when we were squaring off with our American cousins, serious consideration was even given to converting woodboats into gunboats! In an order entitled 'Primary arrangements to be observed in assembling the Militia in case of emergency,' dated 9 December 1812, were these instructions: 'and should the alarm [of an American attack] take place whilst the Water communication is open, the Officers commanding Corps should press all the Wood Boats in their respective Districts, to convey them to the places of Assembly and, afterwards, to assist in concentrating the force. The Boats to be provided with plenty of Sweeps, for the use of them. The Crews are to do their Militia Duty on board of them, instead of in the field; and, if time will permit the forecastle in the boats may be extended, with sufficient Supports, twelve feet in the rear of the fore-mast, to carry a gun. . . .'[14]

With the signing of the Canadian Reciprocity Treaty in 1854, there was a great increase in trade with New England, and the ever adaptable woodboat proved that it was equally useful for carrying firewood, coal,

[14] This information is contained in a letter written by Ward Chipman in 1812 and forms part of the Hazen collection of papers in the New Brunswick Museum.

fish, flour, provisions, grain, ice, and dairy products to the New England ports. Woodboats were such a familiar sight on the St. John that they were mostly ignored, but once they ventured forth along the Maine coast their crews came in for many a jibe. Some of the Americans swore that the woodboats were built on the ice and in the spring were simply sawed off at the desired length. Crews signaling vessels which passed them would shout: 'Hey, cap! Better take your rudder in, it's outdoors.'[15]

Badly built and unseaworthy as many of them were, most of the captains preferred to hug the coast figuring that the danger of going aground was to be preferred to being caught in a sudden storm some distance from shore. If a gale did come up, most of the woodboats sought shelter in the first convenient harbor, bay, or cove, sometimes remaining there two or three weeks until the weather improved sufficiently to permit them to continue their voyage.

On their return trip up the coast the woodboats would carry products from the West Indies, manufactured goods, whaling products, hides, and especially lime and wood ash for the farms. Many, however, had no freight to bring back and returned light. Ballast, apparently, was never used.

There are records to show that woodboats were used as lighters on the east coast of New Brunswick and that they were occasionally pressed into service to refloat sunken steamers and sailing vessels. I am told, too, that the St. John woodboats went fishing, probably in the inshore fisheries. But only a handful of the boats in operation were used for such diversified purposes. One further, rather interesting use should be mentioned, however. About the middle of the last century it was quite common for the female members of the country household to make a trip to the city in a woodboat, usually owned and sailed by members of the family. The ladies generally enjoyed this experience as it meant a welcome break in their otherwise lonely lives. Apparently the woodboat crew was glad to see them too as it meant that the cabin would be straightened up and dishwashing would no longer be a problem, to say nothing of the home cooking which the ladies brought in their baskets and prepared over the brick fireplace.

Although after their advent the steamers handled most of the passenger traffic, some of the woodboats managed to capture a share of this trade. In 1855 a line of three woodboats was advertised to sail twice a week for Fredericton. Just what degree of success this project had we do not know,

[15] They were known the length of the New England coast as 'Johnny Woodboat,' but this name was not used in New Brunswick.

but a few of the best-equipped boats continued for thirty years to carry passengers. As late as 1879 *Duke of Newcastle* under command of Captain J. W. Anderson was still carrying way freight and passengers; she was one of the best-equipped vessels for this purpose. Another, *Teneriff*, sailed by Captain Heran Humphrey a few years later, carried freight and passengers between Washademoak and Indiantown.

Although, as we have seen, the last woodboat was condemned at Saint John in 1930, it was long before this that they had begun to wane in popularity. The schooner had proved to be much more suitable in the New England trade. The two-sail scow had replaced it in popularity on the river because of its shallow draft and its ability to sail in waters inaccessible to the woodboat. The cargoes of country produce and general freight were taken over by the steamers. The 'coup de grace' was administered when scows towed by small tugs captured the wood-carrying business.

George MacBeath is New Brunswick born and has a deep attachment for the St. John River. He graduated from the University of New Brunswick in 1946 with first class honors in French and history, and received his doctorate at the Sorbonne, (Docteur de l'Université de Paris avec mention très honorable) last year. Since 1949 he has been Curator of the Department of Canadian History, at The New Brunswick Museum. This Department contains what is generally considered to be the largest and finest marine collection in Canada.

William Saunders, mariner, 1848-1863.
From a daguerreotype taken in 1859 in the possession of the author

Extracts from the Diary of William Saunders, Mariner, 1848 to 1863

With an Introduction by A. Fred Saunders

WILLIAM Saunders, born 1834 at Rhuddlan, Flint, North Wales. Shipped as an apprentice seaman in the Liverpool-New York Packet Service in 1848. From 1850 to 1863 he served as seaman, third mate, second mate, and first mate on nine American sailing ships in both the Atlantic service and the New York-California-China trade. He was a resident of Brooklyn, New York, from 1861 until his death in 1910.

The diary of William Saunders covers most of his life at sea, beginning with the year 1848, when, at the age of fourteen, he shipped as an apprentice seaman in the New York-Liverpool Packet Service.

He had the good fortune to survive three shipwrecks, accounts of which are included in his diary. Through the years following, he served on nine American sailing ships as listed below.

Packet ship *Rappahannock,* Captain Cushing, Tapscott Line, New York and Liverpool. Owners, Sprague and Robinson, New York. William Saunders, apprentice seaman 1848 to 1851, third mate 1852 to 1853.

Ship *Sarah J. Boyd,* Captain Jacob D. Whitmore. New York to Havana, Cuba, 1853. William Saunders, third mate.

Packet ship *Saratoga,* Captain Benjamin Trask, New York and Liverpool service. Owners, State and Company, New York. William Saunders, 1853, second mate.

Clipper ship *Tingqua,* Captain Jacob D. Whitmore. New York to San Francisco, Honolulu, Shanghai, China. Owners, Olyphant and Co., New York. William Saunders, 1854-1855, second and first mate.

Clipper ship *Resolute,* Captain Daniel McKenzie. New York to San Francisco, Manila, Hong Kong, China. Owners, A. A. Low and Bro., New York. William Saunders, 1855-1856, first mate.

Brig *Merlin,* Captain Frederick Gibbs. New York to Barcelona, Spain, and the West Indies. William Saunders, 1857-1859, first mate.

Packet ship *North American*, Captain Luce, Black Star Line, New York to Liverpool. Owners, Grimshaw and Co., New York. William Saunders, 1860-1862, second and first mate.

Ship *Planter*, Captain Bailey, chartered by U. S. Government. New York to New Orleans. William Saunders, 1862-1863, navigating officer, Quartermaster's Department, United States Army.

A Close Call at Sea, 1853

The American Ship *Rappahannock*,[1] Captain Cushing, sailing from Liverpool bound for New York with a full cargo of general merchandise and a passenger list of 175, arrived off the Grand Banks of Newfoundland one night in the early spring of 1853. The fog was so thick that you could not see a ship's length ahead, like a heavy wet blanket enveloping everything. A heavy swell was running, with the wind from the southwest. Our ship was close hauled on the port tack, making about six or seven knots, and rolling heavily in the long swells, her sails wet and heavy. The watch on the forecastle lookout kept up a continuous blowing of fog horns and the big ship's bell was sounded at short intervals.

At 10 P.M., the first mate, whose watch it was, went below, leaving me, the third mate, in charge of the deck. Going forward to alert the lookout, I heard, faintly, a strange sound coming out of the distance; putting my head down on the weather rail, I could now hear it quite clearly. It sounded like something churning the water; it would last perhaps thirty seconds, then stop, to be repeated shortly and each time becoming louder, then, like a flash, its meaning came to me. It was the noise made by the racing paddles of a side wheel steamship, as she would roll from side to side in the long swells, one of her wheels would be lifted out of the water causing it to race, making the peculiar churning or whirring sound which I heard.

In thick foggy weather at sea, it is most difficult to locate, from sound alone, the exact position of an approaching vessel, especially so when no warning signals are sounded. Why this steamer did not sound a fog horn or bell, we never knew.[2] I listened most intently as the sound grew louder. As near as I could tell, she seemed to be coming head on a point or two on our weather port bow. There was no time to be lost if a collision was to be avoided. Running aft to the wheel house, I shouted to the man at the wheel, 'Hard up with the Helm!' He obeyed instantly, as I jumped for the wheel to help him. Responding slowly, our heavily loaded ship fell off three or four points. Suddenly, there was a great crashing and splashing. I rushed out on deck to find the high hull of a large side wheel steamship alongside, her cabins aglow with lights and the only living persons to be seen were the faces of two white hatted cooks looking down on us from a pantry window high above.

Coming out of the wheel house, I had a quick glimpse of her straight stemmed bow with a huge gilded figurehead representing 'Neptune' blowing his horn. I called out 'That's the *Atlantic*' knowing that she was the only ship of the American Collins Line having such a figurehead. As she lunged past us, our deck was deluged

[1] *Rappahannock* of the Tapscott Line of packet ships was owned by Sprague and Robinson of New York.

[2] Steam whistles were not in general use on ocean steamships in 1853.

by the great splash thrown up by her paddles backing water. As her paddle box passed us, we could see *U. S. MAIL* in gold letters across the side. The only sound that came to us at any time from aboard the steamer was the gong in her engine room sounding full speed ahead. Due to the closeness of the two vessels, and rolling as they were, our ship was in immediate danger of having its rigging and spars carried away, leaving us helpless.

Aroused by the commotion, Captain Cushing arrived on deck, followed by several of the passengers and the mate who was greatly surprised to see what had happened in such a short time since he had left the deck to go below. The first thing the Captain did was to rush to the stern of our ship, calling through a speaking trumpet, 'What Ship is That?',—repeating it several times, but no answer came back.

As mentioned before, our ship was paying off before the wind and the steamer keeping her course, brought our quarter so close to her that something caught our main brace and snapped the bumpkin. Fortunately, the yards were spared. As her big, round stern faded into the fog and darkness, the glow of our signal lights revealed dimly in white letters, *Atlantic of New York*. It had been a very close call for both ships. Had not our helm been put over so promptly, nothing could have prevented a head-on collision resulting in both ships going down, and probably, as so often happened at sea in those days, without leaving a trace.

The whole thing was over so quickly that it seemed uncanny. At no time within our hearing did the oncoming steamer give any warning signal of her approach. It seems incredulous that any vessel would fail to take such precautions with weather conditions as they were.

We finally ran out of the fog bank and without further incident arrived in New York Harbor. Our crossing time—26 days from Waterloo basin, Liverpool, to our berth in Atlantic dock Brooklyn.

Fire on the New York Waterfront in 1853

Early in December 1853, I shipped as Second Mate on board the beautiful new American Clipper *Tingqua*[3] under Captain Jacob D. Whitmore.

The ship had just returned to New York from Shanghai, China, with a cargo of tea and camphor. The crew had been discharged, and when we had finished with the unloading of the cargo, Captain Whitmore and his brother, who was first mate at the time, left for a three weeks' visit to their home down in Maine. I was placed in charge of the ship with a night watchman. The *Tingqua* was docked at the foot of Fulton Street next to the ferry slip.

On the night of December 26th I attended a performance at Niblos Garden Theatre, returning to the ship a little before midnight; and going below to my stateroom, I was about ready to turn in when the watchman shouted 'FIRE!' and started to pound on the deck over my head. Hurrying into my boots and heavy sea jacket, I rushed on deck to find a large building on Front Street near Maiden Lane in

[3] *Tingqua* was launched from the yards of George Raynes at Portsmouth, New Hampshire, 2 October 1852. She was built for Olyphant & Co. of New York and was of the extreme clipper type measuring 145 x 31:9 x 19 feet and of 668 tons. She was named after one of the most prominent Hong merchants of Canton, China. Her figurehead was a gilded Chinese dragon of ferocious appearance, the double tail extending on both trail boards. The hull was painted black with a gilded rope along the sides.

flames. Our ship was docked only four short blocks north of the fire and in great danger from the cloud of sparks and burning embers carried into the air by a strong South wind. The night was bitterly cold with much ice about and the firemen were having trouble with frozen water hydrants.

My first thought was to get some help but not a man could be found as everyone was rushing to see the fire. Quickly getting together every bucket and tub on the ship, we filled them with water and placed them about the deck with several deck swabs handy, and it was not long before they were in use. Our ship was moored to the dock, bow and stern, with heavy anchor chains. After much hard work, we managed to replace the chains with hemp rope hawsers. The ship was floating high as she had only a few tons of gravel ballast in the hold. So I figured that if things got too bad, we could easily cut the rope hawsers and the wind would blow us out into the River where we could drop the anchor.

We had just finished this job when sparks began to fall about the ship. Fortunately there was no canvas aloft as all of the sails were down for repair and overhauling. The watchman and I were soon on the jump putting out burning embers as they would drop here and there about the deck. By four o'clock the wind had moderated and the fire had pretty well burned itself out. Our ship was at last out of danger. The only damage suffered, a few charred spots on our quarter deck and some holes burned in the canvas cover on the starboard life boat. We were lucky to escape the sad fate of several fine ships that were docked nearer to the burning building.

The *Great Republic,* largest sailing ship built up to that time, was docked at the foot of Maiden Lane, only one block away from the fire. This beautiful ship was all ready to sail on the morning tide, bound for San Francisco, on her maiden voyage. All sails were bent below the royals, the crew was aboard, and a full cargo of grain and general merchandise stowed in the hold. I had been aboard her only two days before and marveled at her size and beauty. An unusual and unique feature of this ship was her four decks, the upper, or spar deck, being flush with the covering board and protected by a brass rail on oak stanchions. She also had on deck a fifteen horse power steam engine to hoist the yards and work the pumps,—the first I had ever seen on a sailing vessel. Her master, Captain Lauchlan McKay was a fine man and a most capable mariner. I knew him well. Shortly after midnight a shower of sparks and flaming embers were falling about the ship. Suddenly her fore topsail was on fire, an ember had lodged in the bunt of the sail and before it could be reached, the sail was loose and flapping in the wind, setting fire to the other sails. Her crew tried to cut the sails loose but were driven below by the intense heat. Soon the burning yards and gear were falling to the deck, setting fire to everything. The fore topmast broke short off coming down end on thru the decks setting fire to the cargo. In less than two hours, the once *Great Republic* was but a burned out hulk. At the outset, every effort had been made to tow the ship out into the river, but the tide was low and the heavily laden ship was fast in the river mud—the tow boats could not budge her.

At the next pier lay the fine Clipper *White Squall*—a beautiful ship, she created a great deal of attention by having everything from the water line to the main truck painted white. She had discharged her cargo and was afloat. They cut her moorings and she drifted out in the midstream, but it was too late—her sails had caught fire and soon she was all ablaze, illuminating the river in all directions, a grand but

sad sight. When opposite Fulton Ferry the windlass burned away, her anchor chain rattled out and the flaming hulk drifted ashore at Williamsburg near the Navy Yard. She was a total wreck.

At the head of the dock with the *White Squall* lay the large ship *Silas Wright,* and on the other side the *Joseph Walker*. Both were burned to the water's edge. The Clipper *Red Gauntlet* in dock one block south from the burning ship, escaped any serious damage as she was out of range of the sparks.

The Packet Ships *Constellation, Andrew Foster* and *Albert Galatin* lay at the docks of the Black Ball Line, Burling Slip between Fulton Ferry and Maiden Lane, escaped destruction but were badly scorched.

It was a harrowing night for those along the waterfront. At eight o'clock that morning I reported at the office of Olyphant and Co., 66 South Street, owners of the *Tingqua,* then secured the services of some riggers to re-moor the ship to the dock with chains. When Captain Whitmore returned on December 28th, he was greatly relieved to find his ship safe and sound. He commended me highly for the way we had handled the situation and later on made me first mate.

We lay in New York two more weeks preparing the ship for the long voyage ahead. In mid-January we were towed in ballast to Philadelphia where a full cargo of general merchandise and grain were taken aboard, and on February 9, 1854, our ship cleared the Delaware Capes bound 'round Cape Horn for the Golden Gate, the Hawaiian Islands, Shanghai, China and back to New York via the Cape of Good Hope. I am looking forward to this voyage with a great deal of interest as it is my first voyage around the world.

Doubling Cape Horn in 1854

The American Clipper *Tingqua* under the command of Captain Jacob D. Whitmore, cleared New York, in tow, January 12, 1854, bound for Philadelphia to take on a full cargo of general merchandise and grain for San Francisco. Arriving off the mouth of the Delaware River, our ship came to anchor while the ice boat opened a channel in the frozen river.

We were then towed up to the Arch Street wharf where our gravel ballast was unloaded. An amusing incident happened shortly after the unloading started. In New York we had taken aboard about twenty tons of Chinese money made of yellow metal. It was packed in large canvas bags and stowed in the hold with our ballast. During the trip down to Philadelphia, several of the bags had broken open and the loose coins became mixed with the gravel. As this was being unloaded in a pile on the wharf, someone ashore espied the yellow coins. The news spread quickly, and soon the wharf was crowded with men, women and children, all fighting to get at the money. They interfered so much with our unloading, that a squad of policemen had to be called to clear the wharf. Those who succeeded in getting some of the coins must have been disappointed to find they were brass, not gold.

The next three weeks are busy days for everyone aboard. The loading of the cargo, the provisioning of the ship, overhauling the rigging, cleaning, painting, and polishing the brass work, of which there is a lot on our ship. These are just a few of the hundred and one things necessary to prepare the ship for our long voyage ahead. We shall be gone a full twelve months.

At last the ship is ready. Our crew came aboard, and early the next morning, February 9, 1854, a steamboat towed us down river to the wide, open waters of Delaware Bay. The tow boat has peen cast off, all hands are ordered aloft to make sail, the air rings with the song of the chantyman, and everyone is happy to be at sea once more. Under full sail the *Tingqua* cleared the Delaware Capes late in the afternoon.

Our voyage will take us around Cape Horn to San Francisco, Honolulu, and Shanghai, China; then the long haul homeward from the China Sea through the Straits of Sunda into the Indian Ocean, around the Cape of Good Hope, and across the wide Atlantic to New York, our home port.

The second day out word was passed forward that Captain Whitmore 'is out to make a record run.' The *Tingqua* is a steady and fast ship, her master one of the best. We have a good crew, so, with favorable winds and weather we should make the Golden Gate in about 120 days.

The run down to the Equator has been fair, crossing the line 20 days out. The crew celebrating the event with the usual horseplay, the green hands stripped to their waists are lathered and shaved with rusty iron hoops from an old cask, then doused with buckets of ice cold sea water; the leader of ceremonies wearing a tin crown and holding a trident, pronounces them full fledged Sons of old Father Neptune. All hands were served 'Plum Duff' at dinner today—a rare treat for the crew.

From the Equator to the Falklands the weather and winds variable, but the ship made some good daily runs. Now the weather became much colder and we are wearing winter clothing, the barometer is falling rapidly as the ship approaches 'Tierra del Fuego,' (Land of Fire). We are running into strong headwinds and soon great banks of heavy black clouds are rolling out of the southwest bringing violent squalls of rain and sleet,—the wind increasing in fury, the sea becoming the roughest that I have ever experienced. All hands are aloft shortening sail and it is a hard job reefing and clewing up sails that are wet and frozen stiff. The storm continued through the night, and we were soon to learn that this is just a foretaste of what Cape Horn has in store for us. With dawn there was a short lull in the tempest, the sun came up about as high as a marling spike (as the sailors say), but we did not see it for long as soon the sky was filled with clouds turning day into the black of night, and the squalls of snow, sleet and hail pelted us with greater fury than ever; the mountainous seas breaking over the deck which is waist high in water most of the time. The ship finally rounded the false Cape after being blown back three times. Our port quarter lifeboat has been carried away by the sweeping seas and the main topsail blown from the yards. Shortly after this we nearly lost our foresail—it was blown out of the gaskets and required most of the crew to secure it as it was frozen stiff. When aloft the men are in constant danger of being swept from the ice coated rigging as the ship rolls and lunges in the heavy seas. The sleet and hail is driven with such force as to cut the skin on our hands and faces. During one of the worst blasts our ship was actually on her beam ends the lee yards trailing in the water. We have endured this weather for ten days and nights with little let up.

Finally the wind changed to the northeast and some progress has been made; then the wind died down and the ship was becalmed for two days in a thick fog. On the night of the second day, the wind was at it again with sleet and snow. As a parting salute, vivid flashes of lightning made a most weird and startling effect as it lighted up the raging seas and bleak rocky headlands. This continued, on and off,

throughout the night. At last day dawned with a stiff wind out of the south east.

Cape Horn is in full sight and we rounded this most desolate of headlands with gladsome hearts, for at last we are on the Pacific. During the next twenty-four hours, we were thawing out and repairing the damage done to the ship, also washing and mending our clothing. We are now in calmer seas and warmer temperatures.

We crossed the Equator 98 days out. We are now having favorable sailing winds and fine weather—all hands happy and working with a will. The ship is now making some very good daily runs, logging 2666 miles in 14 days, arriving off the Golden Gate 115 days out. We sailed up the Bay, and warped into the Long Wharf. This ends the first leg of the long voyage.

This is my first view of California. San Francisco Bay is the most beautiful in the world.

The *Tingqua* will leave for Honolulu just as soon as the cargo in unloaded and ballast taken on.

Last Voyage of the American Clipper Ship Tingqua

Under command of Captain Jacob D. Whitmore the beautiful Clipper Ship *Tingqua* sailed from Shanghai, China, on the early morning tide September 14, 1854, bound for New York with a full cargo of tea and silk. We cleared the Straits of Sunda 38 days out, passing the Cape of Good Hope 21 days later and crossing the line December 13, 90 days out. The winds were favorable all the way across and the voyage was uneventful until the morning of Friday, January 12, 1855. The ship approaching the American Coast was running down with the Gulf Stream. All sails were set as the wind was light south by west. I came on deck at eight o'clock and assigned the watch various jobs to prepare the ship for port.

A heavy fog developed during the early morning and by eleven o'clock the wind had freshened and a heavy snow storm set in. No observations had been taken since the evening before. At noon we went below for dinner. Just as we started to eat, a sudden jar and a grating sound under us gave warning that the ship had run aground. All hands rushed on deck but it was too late. We had struck the dreaded Diamond Shoal, off Cape Hatteras, the graveyard of the Atlantic. Immediate orders were given to back the yards and every effort made to back her off, but all to no avail as the heavy ground swell carried us higher and higher on the bank and soon the ship began to pound badly. All sails were clewed up and a sheet anchor with cable launched to windward. Signals of distress were set, the ship's cannon was fired at five minute intervals and rockets sent up. Part of the ship's keel had been ripped off and was floating alongside. The carpenter reported four feet of water in the hold.

About two o'clock the fog lifted enough for us to make out a schooner working up towards us in the inlet between the Cape and the shoal. I ordered the coxswain to lower a boat, take four men, and report our condition to the Captain of the schooner, which proved to be the *Charles C. Stratton* of Philadelphia. The boat returned to our ship bringing the Captain who, after a talk with Captain Whitmore, promised to lay by until morning. Shortly after he left us, the fog thickened and we lost sight of the vessel.

At five o'clock, the carpenter reported eight feet of water in the hold and prepara-

tions were under way to abandon ship. At six o'clock we loaded the starboard boat (a metallic, non-sinkable lifeboat) with our charts and instruments. Taking five men, we started in the direction the schooner had last been seen. Feeling our way through the fog and snow the schooner was located by her signal lights. Bringing our boat alongside, I put one man aboard with the charts and instruments. Her Captain assured me that his vessel would lay by until morning. The wind had shifted north by west, blowing hard and freezing cold.

The boat's crew now refused to return to the ship until threatened at the point of my pistol. My word had been given to Captain Whitmore that we would be back with the boat. I felt fully justified in taking such drastic means to force them to take me back to our ship.

There was no life saving station at Cape Hatteras in 1855 so the rescue of the men aboard the wreck depended entirely upon us. It was a terrible trip in the darkness thru dense fog and icy snow. The heavy seas soon filled our boat and it was with the greatest difficulty that we managed to keep the boat from turning over. Thanks to the staunchness of the life boat, its unsinkable qualities and the determination of the crew, we finally reached the ship. A signal light was burning in the mizzen top where Captain Whitmore, the second mate, carpenter and four seamen had taken refuge. They were coated with ice and half frozen. The high seas completely breached the ship, sweeping everything from the deck.

The port life boat had left the ship with the remainder of the crew sometime before we arrived. They were picked up by a vessel in the inlet.

With great difficulty, our boat was worked up under the stern of the *Tingqua*. Fortunately the spanker boom had not been carried away and hung over the stern. We held the boat as best we could while the men, one by one, slowly worked their way, hand over hand, down the lift to the overhanging boom. It was a most hazardous operation as everything was coated with ice, and the men in our boat were in constant danger of being crushed under the stern of the ship as the boat rose and fell in the heavy seas. However, at long last we had all the seven men aboard and cleared away from the ship shortly after midnight.

It was heartbreaking, even to tough seamen like ourselves, to see the fine ship that had been our home for so long, going to pieces on that shoal. All of our possessions, except the clothes on our backs, went with her. We turned about and headed for the inlet guided by occasional glimpses, through the shifting fog, of the flashing light on Hatteras. It was a hard job to steer and handle the water-filled boat loaded with twelve half frozen men. But God was with us, and at last we sighted the signal lights of several vessels running under shortened sail in the inlet. We worked our boat in close enough to the nearest one, which came about when they heard our shouts for help. She slowed down enough for us to come alongside. Grabbing hold of the shrouds, four of our men held the boat while the rest of us scrambled aboard over a deck load of ice-covered barrels of rosin. The vessel was the Schooner *R. L. Myers,* bound for New York. Her crew, hearing the commotion, piled on deck and helped us to a place of safety. We were so exhausted and benumbed by the cold that some of the men had to be carried below. They gave us brandy, dry clothes and food and we were soon asleep on the floor of the warm cabin.

Next morning broke clear and cold and most of us transferred to the Schooner

Charles C. Stratton which landed us in Philadelphia late in the afternoon. Captain Whitmore was taken to New York on another vessel.

The Captain of the *Stratton* took us to the office of the agent of the owners of the *Tingqua* and he provided us with a meal and tickets for New York on the Camden & Amboy Railroad.

Arriving in New York Monday morning, I boarded a Dry Dock Stage and rode to 14th Street where my friends the Nields lived. Tuesday, January 15th, reported at the office of Olyphant and Co., 66 South Street, owners of the *Tingqua*. I could not have made a very presentable appearance dressed in a pair of faded dungarees, my blue pilot cloth jacket white with salt from the sea water, an old red skull cap and sea boots which they gave me aboard the schooner. The first man I met was Captain Whitmore, who introduced me to the owners as his mate who saved the lives of himself and six men of the crew.

After giving my report on what happened, I told them that I claimed no great personal credit for my part in the rescue as it was a matter of duty to my fellow men. Also that all of my possessions except a 20 dollar gold piece and my pistol were lost. Had it not been for the pistol, I could not have persuaded the boat's crew to return to the ship. The owners gave me a vote of thanks, wages owed me and a hundred dollars in cash, amounting to over four hundred dollars.

The *Tingqua* was valued at forty thousand dollars and the owners collected the full insurance on the vessel. However, the Underwriters were not satisfied with Captain Whitmore's explanation of the ship's approach off the Coast. So they revoked his Master's License for one year.

A landsman might think that after a rough experience such as we had passed through, one would have had enough of sea life and perhaps seek a less hazardous vocation; but no, I had gone to sea as a young boy and the salt was in my blood. Within a few months I was again at sea as First Mate to Captain MacKenzie of the American Clipper Ship *Resolute,* owned by A. A. Low & Bro. of New York. We cleared New York October 16th, 1855, bound 'round Cape Horn for San Francisco, Manila, Hong Kong, China and back to New York. We were away 285 days.

Crossing the Atlantic in 1853

The American Packet Ship *Saratoga,* Capt. Benjamin Trask, left New York the morning of June 16, 1853 bound for Liverpool. The ship, in tow, had not cleared the upper bay before a mutiny, due to too much bad whiskey, broke out among the crew. The tow boat was signalled to stop, a signal of distress was hoisted, and the ship came to anchor. At the point of our pistols, the fighting men were driven below hatches. When the Harbor Police came aboard, the trouble makers were placed in irons and shipped back to New York. We then searched the crew's quarters, finding several gallons of rum and whiskey which was thrown overboard. A new crew was shipped, and this time we took the precaution to search the men's dunnage before they were allowed to go forward. There was no further trouble on the ship.

Captain Trask has the name of being a hard master, demanding of his officers and men full time and attention to their duties. He will not tolerate shirkers. This is my fourth crossing on the *Saratoga*. I have found him fair and just at all times.

June 17, 1853. The ship was detained another day by heavy fog in lower New York Bay.

June 18, 1853. The ship under full sail cleared Sandy Hook Lightship at seven P.M. We carried the wind abeam all the way across the Atlantic, logging some remarkable daily runs, averaging twelve knots, some days as high as fifteen.

July 3, 1853. The *Saratoga* arrived off Cape Clear, Ireland, sixteen days out from Sandy Hook. The ship is living up to her record for speed.

July 6, 1853. We are docking in Waterloo Basin, Liverpool, twenty-one days out of Burling Slip, New York. While the cargo of grain is being discharged, I paid a visit to my Parents in Manchester, also my Aunt Powell in Runcorn, Lancashire.

July 10, 1853. Returned to Liverpool, bringing my Mother, Brother John, and Sister Maggie. They are to go to America with me on the *Saratoga*. As an officer on the ship, I am able to secure passage for them in the second cabin with comfortable staterooms and good meals at steerage rates.

Westward Crossing

July 12, 1853. The *Saratoga* cleared Liverpool bound for New York with a cabin and steerage passenger list of over three hundred, also a cargo of general merchandize. Strong westerly head winds the first few days out, shifting to South by West, weather becoming extremely warm with severe thunder storms at night. Making fair progress.

Nothing of note happened until the morning of July 17, 1853, when all passengers are ordered on deck for the day, while the ship is being fumigated, a requirement on all ships carrying steerage passengers. The method is most hazardous.

Buckets of tar in which red hot iron bolts are dropped causing a dense smoke are placed in different parts of the steerage and second cabin. All hatches are battened down and companionway doors tightly closed. All hands are engaged in this work and we all dread the job due to the great danger of fire, and our fears were not without reason as we soon found out.

I was in charge of the second cabin situated aft of the mainmast. It has two doors at the entrance to the companionway. The roof of the cabin is about two feet above the deck, and is lighted by small windows along the side walls, long settees are fastened to the deck with their backs to the windows. My mother and sister were seated on one of the settees. Brother John, a small lad, was playing about the deck at their feet. Peering through one of the windows he suddenly screamed, 'Mother, I see fire!' His cry was heard by those near by. In a matter of minutes the deck became a mass of panic stricken passengers dashing about in the wildest confusion, some trying to jump overboard, others holding them back, several being trampled under foot—the sailors doing their best to calm them down. In the confusion, the third mate lost his head and without orders undertook to make ready one of the life boats, in his haste, he cut the fall instead of the lashing, the heavy boat crashed against the side of the ship carrying away the david, landing in the water a total wreck.

On hearing the child's cry of fire, I pulled open one of the doors leading to the second cabin to be met with a burst of flames. One of the buckets had been upset by the rolling of the ship and burning tar covered a large section of the cabin floor.

With the help of one of the crew, we threw several deck gratings on the fire, checking its progress for the moment. It so happened that two women had been washing blankets in deck tubs near by and left them in the water. Quickly grabbing up the dripping blankets, we rushed back to the cabin and spread them over the burning tar, thus completely smothering the fire on the floor. A few buckets of water put out the burning woodwork of several of the staterooms. It was a very narrow escape for us all.

It is most fortunate that the fire had not started down below in the steerage as it probably would have gained such headway, before being discovered, that it would have been completely out of control. This has been my first experience with fire at sea, and I hope my last.

July 18, 1853. Ship's routine back to normal, but not for long. Two days later, July 20, 1853, we had to perform one of the saddest happenings aboard ship, a burial at sea. A young woman died in childbirth, probably brought on by excitement the day of the fire. The child lived, and is under the nursing care of another woman with an infant of her own. Our hearts went out to the poor husband who had to witness his wife's body being sewed up in canvas and committed to the sea,—the ship's doctor reading the burial service. There was not a dry eye aboard, even the rough sailors were visibly effected by the solemnity of the occasion. A purse of several hundred dollars was raised and presented to the poor father. This is the second burial at sea which I have witnessed.

The ship continued without further incident, with good sailing wind and weather during the rest of the crossing, arriving off Sandy Hook August 6, 1853, twenty-six days out from Liverpool. Taking aboard our pilot, we sailed up the Lower Bay, coming to anchor in the Upper Bay to await Quarantine inspection. We have a clean bill of health.

August 8, 1853. Ship taken in tow arriving in Burling Slip, East River, late this afternoon.

August 9, 1853. Leaving the ship at noon, I took my family to the home of our friends the Neilds on Fourteenth Street where they are to stay until they find a home. I returned to the *Saratoga* that night.

A. Fred Saunders, son of William Saunders, was born, and lived, in the city of Brooklyn, New York, until 1907, *when he became a resident of Syracuse. He has been associated with the silverware industry, as a designer, since* 1892.

The Sea Chart and the English Colonization of America

BY D. W. WATERS

IN the last year of the sixteenth century there appeared from the English press a book that set the seal on the supremacy of the English in the theory and practice of the art of navigation at that time. Between its covers *Certaine Errors in Nauigation . . . detected and corrected* contained a brilliant summary of all the chief contemporary practices of the art of navigation together with a critical examination of their faults, and either the actual means for eliminating them or else sound guidance on the measures necessary to do away with them.[1] It was the work of Edward Wright.

Ten years before, on the morrow of the Armada, Wright had been 'called forth to the public business of the nation, by the Queen.' He was then twenty-nine years old, a Fellow of his Cambridge college, and a gifted mathematician. He was to sail with the Earl of Cumberland on an expedition to the Azores intended to intercept the Spanish annual West Indian convoy and, if possible, Spanish and Portuguese treasure ships. Wright was to gain sea experience to enable him to put into practical form his theories on improving the art of navigation by the application of mathematics.

In the course of the voyage of which he was the chronicler, Wright met the navigator Captain John Davis, already famous for his voyages to the northwest, who joined the expedition at Fayal.[2] It is therefore possible that the two experts—and Davis was a competent mathematician as well as a practical navigator—discussed the problems of chart work, celestial

1 E. Wright, *Certaine Errors in Nauigation, Arising either of the ordinarie erroneous making or vsing of the Sea Chart Compasse, Crosse Staffe, and Tables of declination of the Sunne, and fixed Starres detected and corrected* (London: Valentine Sims, 1599). [Copy in the library of Henry C. Taylor, Esq., of New York.]

2 'The voiage of the right honorable George Erle of Cumberland to the Azores, etc. Written by the excellent Mathematician and Engineer master Edward Wright,' in R. Hakluyt, *The principal navigations, voiages, traffiques and discoueries of the English nation* . . . (London: George Bishop, Ralph Newberie and Robert Barker, 1598-1600). [Copy in library of Henry C. Taylor, Esq., of New York.]

This account is included in E. Wright, *Certaine Errors in Nauigation . . . detected and corrected*, cited above.

observations, magnetism, and mathematical navigation in which both were deeply interested, and towards whose solution both were to make valuable contributions.[3] Although some rich prizes were taken and the town of Fayal was captured and ransomed for 2,000 ducats, the expedition did not achieve its main objective and, what was almost worse, instead of the adventurers getting home in time to spend Christmas snugly and convivially in port, as they had planned, they were forced by contrary winds, high seas and bitter weather to spend miserable weeks at sea and a cheerless storm-tossed Christmas off Land's End, knowing that their richest prize had been lost on the Cornish coast.

They had taken their last prizes on 6 November, in latitude 39° N., 'and about 46 leagues to the Westwards from The Rocke' of Lisbon. The first ship captured that day had been taken 'at about eight or nine of the clocke before noone . . . loden with Sugar and Brasile [wood, for dyeing].' While they were fetching 'some of the chiefe of their men aboord . . . one out of the maine toppe espied another saile a head . . . so,' recounted Edward Wright, 'we pursued speedily this new chase with all the sayles we could pack on, and about two a clocke in the afternoone overtooke her. . . .' A couple of round shot had quickly caused her to strike sail and 'approaching neerer, we asking of whence they were, they answered,' and a fearful joy must have filled the Englishmen's hearts at the reply, 'from the West-Indies, from Mexico, and Saint John de Lowe (truely called Ulhua).' Her cargo of hides, cochineal and sugar, with chests of 'China dishes, with some plate and silver' had been rich indeed. 'And now,' continued Wright, 'wee had our hands full and with joy shaped our course for England . . .' going 'meerily before the winde with all the sailes we could beare, insomuch that in the space of 24 houres, we sailed neere 47 leagues, that is seven-score English miles, betwixte Friday at noone and Saturday at noone (notwithstanding the shippe was very foule, and much growne [with weed] with long being at sea).' This speed, five and a half knots, was indeed good going, so good that, Wright recalled, it 'caused some of our company to make accompte they would see what running

[3] Captain John Davis wrote and published *The Seamans Secrets* (London: Thomas Dawson, 1595). [Of this there is a copy in the British Museum. There is a copy of the rare edition of 1626—*The Seamans Secrets. Divided into two parts . . . newly corrected and amended . . .*, printed by John Dawson, 1626—in the Folger Shakespeare Library and one in the library of Henry C. Taylor, Esq., of New York.]

Davis's most important contribution was his invention and description of the backstaff, which he later developed into the Davis Quadrant. This revolutionized the method of taking sights at sea and enabled observations to be made with unprecedented accuracy. The earliest illustration of a Davis Quadrant is in Captain George Waymouth, *The Jewell of Artes*. [A manuscript on Navigation, Shipbuilding, Fortification, Gunnery, etc. . . .] [Signed 'George Waymouth.' Written and bound *circa* 1604.] Manuscript on paper. Folio. Bound for presentation to King James I. [Two copies only of this remarkable and important work are known. One is in the British Museum, the other and earlier copy is in the library of Henry C. Taylor, Esq., of New York.]

at Tilt there should bee at Whitehall upon the Queenesday,' and that 'others were imagining what a Christmas they would keepe in England with their shares of the prizes we had taken.' But no sooner had these pleasant thoughts been expressed than the merry breeze failed them, and next 'came about to the Eastwards (the very worst part of the heavens . . . from which the wind could blow),' for now it was dead in their teeth and on it they 'could not fetch any part of England.' At once of water 'a man was allowed but halfe a pinte at a meale, and that many times colde water, and scarce sweet. Notwithstanding this was an happie estate in comparison of that which followed,' for from half a pint they came to a quarter, and that not for long for, thinking to put into some port in Ireland to ease their wants they lay a-hull off that coast all one night only to find at dawn that they had been carried so far to leeward that they had no chance of fetching any part of Ireland. So they turned back again and beat their laboring way once more toward the east. 'In the meantime,' recounted Wright, 'we were allowed every man three or foure spoones full of vinegar to drinke at a meale: for other drinke we had none, saving onely at two or three meales, when we had in stead hereof as such wine, which was wringed out of Wine-lees that remained.' This they endured for a fortnight, eating but little by reason of their great thirst, save 'when there fell any haile or raine' when they did eat of 'the haile-stones . . . more pleasantly then if they had bene the sweetest Comfits in the world.' When the rain fell they hung up sheets, and clouts of cloth, tied ropes round the masts to catch the tricklings, and licked the decks, 'sides, railes and Mastes of the shippe.' In the extremity of their want they swallowed the very sludge in the scuppers, 'mud and all,' without 'tarrying to cleare or settle it,' and many fought to do so. 'They put also bullets of lead in their mouths to slake their thirst.' And soon 'in every corner of the shippe were heard the lamentable cries of sicke and wounded men sounding wofully,' and 'lightly every day some were cast overboard.' In this pitiful state they accounted 'the second day of December 1589 . . . a festivall day . . . for it rained a good pace' so that they made a store of water and 'filled their skins full besides' though, if the truth be known, it was so 'muddie and bitter with washing the shippe' that it made them remember and wish with all their hearts for 'many a Conduit, pumpe, spring, & streame of cleare sweete running water in England. . . .'

As if thirst were not misery enough they were the while 'so tossed and turmoiled with such horrible stormie and tempestuous weather, that every man had best holde fast his canne, cup, and dish in his hands' as he ate, 'yea and himselfe too, many times, by the ropes, railes, or sides of the ship or else he shoulde soone find all under his feete.'

The 'maine saile was torne from the yarde and blown overboord quite away into the sea without recovery,' and every other was rent and torn by the fury of the wind. 'The raging waves and foming surges of the sea came rowling like mountaines one after another, and overraked the waste of the shippe like a mightie river running over it, whereas in faire weather it was neere 20 foote above the water.' Then, in their distress, they cried unto the Lord: 'We mount up to heaven, and descend to the deepe, so that our soule melteth away for trouble; we reele too and fro, and stagger like a drunken man, and all our cunning is gone,' for, 'with this extremitie of foule weather the ship was so tossed and shaken, that by the craking noise it made, and by the leaking which was now more than ordinary, they were in greate feare it would have shaken in sunder.'

But the Lord heard their crying and delivered them from their distress, for 'forthwith a new maine sail was made and fastened to the yarde, and the rest repaired as time and place would suffer,' and when they were like to have lost their new main-sail in a fresh storm 'Master William Antony the Master of the ship himselfe (when none else would or durst) ventured with danger of drowning by creeping along upon the maine yarde (which was let down close to the railes) to gather it up out of the sea, and to fasten it thereto, being in the meane while oft-times ducked over head and eares into the sea.'

Some who had been at sea for twenty years said they had never seen such terrible storms, others 'vowed that if they returned safe home, they would never come to Sea againe.'

At length they made the land, and on 3 December 1589, they anchored in safety in Ventry Bay. Here they refreshed themselves 'whilst the Irish harpe sounded sweetely in their eares,' and felt, as it were, life 'restored unto them againe.'

On 20 December, having well provided themselves with fresh water—the Irish beer had proved a 'purgation to them that tooke it'—and other things necessary they weighed and proceeded with a fair wind. But in a day or two it scanted so that they were forced to keep 'a cold Christmas with the Bishop and his clearks (rockes that lye to the Westwards from Sylly, and the Westerne parts of England).' To add to their depression they met with an English ship that brought 'sorrowfull newes withall, that the last and best prize we tooke, had suffered shipwracke upon the Cornish coast and Captain Lister and all the men in the ship were drowned, save 5 or 6.'

Holding their course for Plymouth 'at night,' continued Wright, 'we came neere to the Ram-head (the next Cape Westwards from Plimouth

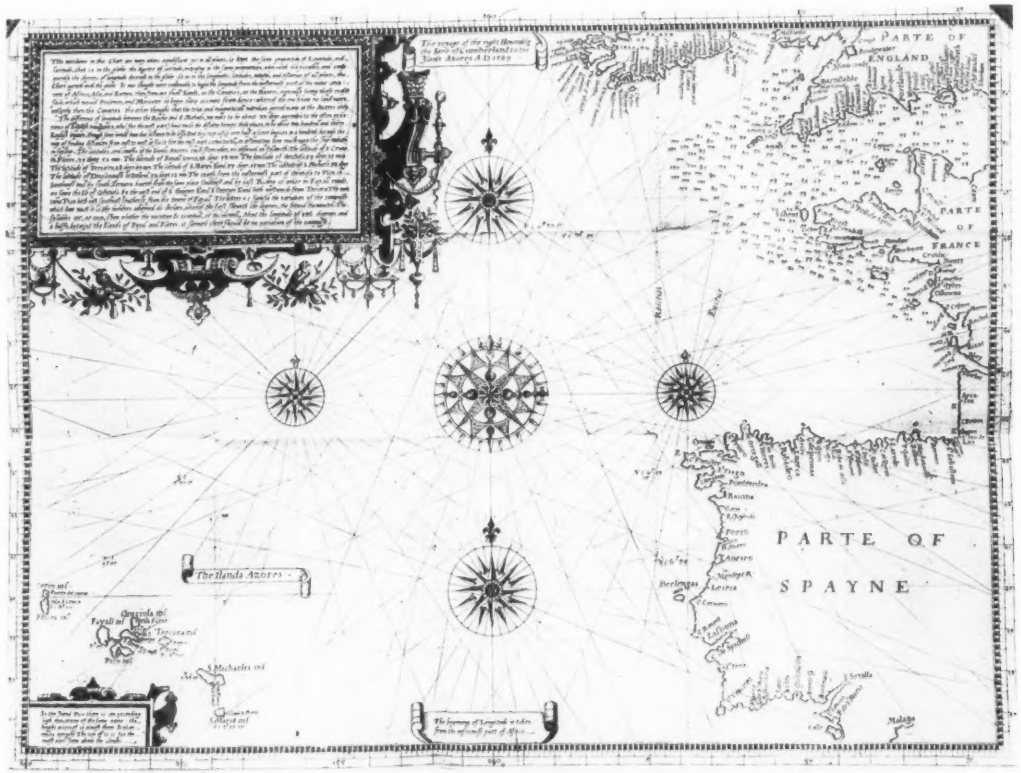
Sound), but we were afraid to double it in the night, misdoubting the scantinesse of the wind. So we stood off to Sea halfe the night, and towards morning had the winde more large, and made too little spare thereof, that partly for this cause, and partly through mistaking of the land, wee were driven so much to leewards, that we could not double that Cape: Therefore we returned back againe, and came into Falmouth haven, where we strucke on ground in 17 foote water; but it was a low ebbe, and ready againe to flowe, and the ground soft, so as no hurt was done.' And so, he concluded, though it was not the haven where they would be, 'here with gladness they set foote againe upon the English ground (long desired) and refreshed themselves with keeping part of Christmas upon their native soile.'

As a naval and a military operation the expedition had not been a great success, yet it was a most pregnant one in maritime history. The navigational experience Edward Wright gained in it brought so vividly before him the current errors in navigation that, in conjunction with his mathematical calculations and astronomical observations, he was at once able to set to work to rectify them. By 1592 he had completed and submitted to the Earl of Cumberland the draft of the results of what he termed, the application of 'Mathematicall Studies to the use of Navigation,' *Certaine Errors in Nauigation . . . detected and corrected.*

Wright's most momentous 'correction' was the discovery of the formula and preparation of tables for drawing charts on Mercator's projection. Recent researches have revealed that, at the very time that Wright was making his various mathematical contributions to the improvement of navigation, another mathematician, Thomas Hariot, was doing the same work for Sir Walter Raleigh.[4] They have also shown that Hariot's discoveries and inventions, although made quite independently, were remarkably similar to Wright's. Hariot's mathematical processes, moreover, were far in advance of Wright's. They included the discovery and use of 'the extremely complex and far from obvious method of calculating meridional parts from the integral formula.'[5] Yet for over three and a half centuries Hariot's work has remained unknown, and in his lifetime its practical importance was confined to a small number of sea captains employed by Raleigh, men who kept the secrets of their knowledge and

[4] E. G. R. Taylor, 'Hariot's Instructions for Ralegh's Voyage to Guinea,' *The Journal of the Institute of Navigation* (London), V (1952), 345-350; 'The Doctrine of Nauticall Triangles Compendious I—Thomas Hariot's Manuscript,' *The Journal of the Institute of Navigation* (London), VI (1953), 131-140.

[5] D. H. Sadler, 'The Doctrine of Nauticall Triangles Compendious II—Calculating the Meridional Parts,' *The Journal of the Institute of Navigation* (London), VI (1953), 141-147.



'The voyage of the right Honorable the Earle of Cumberland to the Islands Azores A.D. 1589.'

The earliest sea chart on Edward Wright's 'Mercator's' Projection.

From E. Wright, *Certaine Errors in Navigation . . . detected and corrected* (1599).
Courtesy of Henry C. Taylor

the new mysteries of their art jealously to themselves. But for a series of annoying plagiarisms it seems very probable that Wright's 'corrections,' including the essential details of his chart projection, would, like Hariot's, have remained in manuscript for scholars of later ages to discover. It appears that a copy of Wright's manuscript fell into the hands of Abraham Kendall. Kendall was a navigator of considerable reputation, and the instructor of the brilliant young Robert Dudley, known later in life as the Duke of Northumberland, author in due course of a massive and encyclopaedic work in Italian on navigation, *Dell' Arcano del Mare. . . .*[6] Kendall was Dudley's chief pilot on his voyage of 1594 to Trinidad and Guiana.[7] On his return in 1595 Kendall joined Sir Francis Drake and Sir John Hawkins on their joint expedition to the West Indies. Like Drake, he died off Porto Bello in January 1596. Amongst Kendall's effects was found a navigational manuscript. This, on the return of the expedition, was handed over to the Earl of Cumberland for his perusal. The Earl, believing it to be Kendall's work, passed it to Wright for critical examination. The latter at once perceived it to be a copy of his own researches. While Wright was bursting with indignation over this plagiarism the famous cartographer Jodocus Hondius, to whom Wright had shown details of his projection in the strictest confidence, published maps of the four known continents on Wright's projection, and without any acknowledgment. All this was too much for Wright. He felt bound to put his material together for publication. Some details had already been printed, with his permission, first in Thomas Blundeville's *Exercises* of 1594,[8] then in the enlarged second edition of 1597,[9] and thirdly in William Barlow's *The Navigators Supply*, also published in 1597.[10] But the details were sketchy and a full-bodied version, such as Wright himself only could produce, was clearly now called for.

In sailing from the Azores to Ushant during the tempestuous return voyage of 1589, Wright had sighted land 'when by account of the ordinary

[6] Sir R. Dudley, *Dell'Arcano del Mare . . . Libri Sei. Tomo Primo . . . Tomo Secondo*. Firenze, Nella Stamperia de Francesco Onosti 1646. Charts, plates and diagrams. Folio: and Sir R. Dudley, *Dell'arcano del Mare . . .* In Firenze, Nella stamperia di Francesco Onofri, 1646-1647.

A second edition was published in 1661, Sir R. Dudley, *Arcano Del Mare Di D. Roberto Dvdleo Dvca Di Nortvmbria. . . .* In Florenza, MDCLXI. Nella Nvova Stamperia, Per Giveseppe Cocchini.

[There is a copy of each of the above in the library of Henry C. Taylor, Esq., of New York.]

[7] See, G. F. Warner, Ed., *The Voyage of Robert Dudley to the West Indies and Guiana in 1594* (London: The Hakluyt Society, Second Series, No. 3, 1899).

[8] T. Blundeville, *M. Blundevile his exercises, containing sixe treatises . . .* (London: John Windet, 1594). [Copy in the library of Henry C. Taylor, Esq., of New York.]

[9] T. Blundeville, *M. Blundevile His Exercises, containing eight Treatises . . .* (London: John Windet, 1597). [The second edition. Copy in the library of Henry C. Taylor, Esq., of New York.]

[10] W. Barlow, *The Navigators Supply . . .* (London: G. Bishop, R. Newbery, and R. Barker, 1597). [Copy in the library of Henry C. Taylor, Esq., of New York.]

chart we should have beene 50 leagues short of it.' A final error of 150 miles, even under the appalling weather conditions he so vividly described, Wright could not attribute chiefly to the cumulative effect of faulty estimation of course and distances, and of faulty instrumental errors and errors of observation, great though they undoubtedly were. Thus, through poor workmanship sea compasses were often erroneous even when their soft iron 'wires,' or needle, were retouched at regular intervals by the pilot with his lodestone in order to keep them as highly magnetized as was possible. Variation was still imperfectly understood and its effects were in consequence unpredictable. While Wright was keenly alive to the importance of accurately and frequently determining variation, the instruments and methods of calculation available to him for this purpose did not admit of great accuracy. These compass errors affected, of course, the accuracy of the direction sailed. As for determining distance sailed, this could be estimated only by experience, though a check was possible by using one of the recently introduced and still imperfectly developed logs and log lines in conjunction with a minute glass.[11] The accuracy of these rough and ready means was not increased by the fact that the length of a degree had never been measured accurately and that consequently no one knew the correct length of a sea mile. The length used, was in fact, much too short—by about 17 per cent. Further scope for error lay in the means available for position finding by celestial observation. Except for pole star sights, meridian altitude observations alone were practicable. With the instruments available, the quadrant, astrolabe and cross-staff, the accuracy of observations was limited instrumentally to the order of one half degree; corrections for parallax, dip and height of eye were not known, and the ephemerides contained errors that, for some stars, amounted to several degrees. Add to the foregoing the fact that the absence of mathematical tables and calculating instruments made calculation a lengthy and laborious process in which many a slip was possible, and it will be appreciated that Martin Cortes was justified in saying that the navigator in the sixteenth century needed a special aptitude to be successful.[12] Nevertheless the foregoing handicaps to accuracy were as noth-

11 W. Bourne, *A Regiment for the Sea* (London: Thomas Hacket, [1574]). 4°. Copies of this very rare work are in the Huntington Library and the Library of Congress. All editions of this work are rare. There is a copy of the 1584 edition, not recorded in A. W. Pollard and G. R. Redgrave, *A Short-Title Catalogue of Books Printed in England, Scotland & Ireland, and of English Books Printed Abroad 1475-1640*. (London: The Bibliographical Society, 1926), in the library of Henry C. Taylor, Esq., of New York: *A Regiment for the Sea* . . . , imprinted at London by T. Este for Iohn Wight [1584]. [In this edition the log and log line and its use are more fully described.]

12 M. Cortes, *The Arte of Nauigation . . . Wrytten . . . by Martin Curtes . . . Translated by Richard Eden* (London: R[ichard] J[ugge], 1561). This is a translation of M. Cortes, *Breue Compendio de la sphera y de la arte de nauegar* . . . (Seville: Anton Alvarez, 1551). [There is a copy of each work in the library of Henry C. Taylor, Esq., of New York.]

ing compared to those imposed by the use of the common sea charts. These Wright concluded, 'were in many places much like an inextricable labyrinth of error, out of which it would be very hard for a man easily to unwinde himselfe.' While the existing sea chart was the best means to enable a navigator to know the course and distance from place to place it was, Wright considered, a very poor best. In the geometrical delineation of the meridians, parallels and rhumbs (or lines of compass direction) it was so faulty, he pointed out, that it might cause the mariner to err one, two, or even three whole points of the compass, and in northerly navigations even more, in choosing his course. In finding the distance between places, the errors might amount to from one to four times as much as in reality. All this, he explained, arose chiefly from ignorance of how to represent the curved surface of the globe on the flat surface of a chart. The common sea chart was a plane chart in which the parallels of latitude were drawn parallel to one another and equidistant; the meridians of longitude (when inserted) were drawn parallel and also equidistant one from another, although on the globe, as Wright explained, they converge until they meet at the pole. In low latitudes, and on charts covering small areas, the plane chart's defects were not so serious. But in high latitudes and over ocean areas the defects, as already indicated, become extraordinary.

To some extent, as Wright recognized, the practice of parallel sailing could overcome some of the worst effects of the plane chart's defects upon position finding. This technique of parallel sailing Wright described as the process whereby navigators 'first getting themselves into the height or parellel of the place to which they were going; and . . . knowing assuredly whether they were more eastward or westward than that place, . . . then proceeded alwayes heedfully, keeping themselves under that parallel till they came to the place desired.' This, of course, often involved sailing farther than was necessary in theory, and it did not mitigate the hazards arising from ignorance of distance. This was one practical reason why navigators preferred to use a short sea mile. It resulted in their calculated position tending to be 'before the ship.' This was a valuable safeguard in those days when a landfall was made without the aid of any artificial navigational landmarks, and a premature landfall in the dark hours meant—almost certainly if it were upon a lee shore—death by drowning. Nevertheless, observed Wright, the evidence of many experienced navigators was that, in sailing from the West Indies to the Azores, they still 'often fell in with those islands when, by their account, according to the chart they should have beene 150 or 200 leagues to the Westwards of them.' Wright decided, therefore, that if he could solve the prob-

lem of projecting the curved surface of the globe upon a plane surface in such a manner that navigators could find on it their correct courses and distances between places he would have met their outstanding need. And this is what he did. In *Certaine Errors in Nauigation . . . detected and corrected*, Edward Wright explained the requisite mathematical formula, and included a table (of meridional parts) which enabled hydrographers for the first time to draw charts 'correcting so many and grosse errors and absurdities in the Sea Chart, by the device,' Wright explained, 'of increasing the distance of the Parallels, from the equator towards the Poles, so that at every point of latitude in the Chart, a part of the meridien had the same part of the Parallel as in the Globe.'

Wright acknowledged that he had got the idea of the projection from Mercator's Universal Card or Hydrographical Chart of the World of 1569, but roundly asserted that it was neither from Mercator, nor any other person, that he had learned 'the way how this should be done.' Wright's discovery of the formula for drawing what is now known as the Mercator chart meant that at last a navigator could find from a chart what rhumb (course) would take him to his destination and how far he was from it. This was because the spiral rhumb line of the globe became a straight line on the 'Mercator' chart. Not only could the navigator find the correct bearing and distance between places, but he could at last plot on his chart with confidence his ship's estimated and observed positions.

Not least amongst the interesting features of Wright's *Certaine Errors* of 1599 is his engraved chart of the northeast Atlantic on his projection. This has pricked (plotted) on it the outward and return tracks of the Earl of Cumberland's expedition of 1589, and is the earliest extant chart on a true Mercator's projection.

But with charts on Wright's or Mercator's projection the navigator could do more than prick off from day to day his estimated or observed position; he could now, and for the first time, prick off any calculated position and at any time. It made practicable a completely new technique in navigation, namely navigation by calculation. Within a very few years the mathematical instruments, tables and formulae necessary for exploiting the advantages inherent in the chart began to be invented and published.[13]

However, 'Arithmetical navigation,' as it was often termed, had not

[13] Wright published a revised and considerably expanded edition of his *Certaine Errors* including improved tables of meridional parts in 1610: E. Wright, *Certaine Errors in Navigation, . . .* (London: Felix Kingstõ, 1610). [The only known copy with two maps is in the library of Henry C. Taylor, Esq., of New York. In the same library there is a copy of the third and last edition of *Certaine Errors:* E. Wright, *Certain Errors in Navigation . . .* (London: Joseph Moxon, 1657).]

been fully developed before Wright initiated a revolution in the method of calculation itself. Immediately on the appearance of Napier's *Mirifici Logarithmorum Canonis descriptio* in 1614 he undertook its translation specifically for the use of the East India Company's navigators.[14] Wright's *A Description of the Admirable Table of Logarithms* (of 1616) completed after his death by Briggs, initiated 'logarithmical navigation.'[15] By the time New England was being colonized in the 1620's the revolution in navigational practice was complete.

To conclude, the navigational inventions and techniques evolved in the first quarter of the seventeenth century were all designed to exploit the inherent advantages of that fundamental innovation of Wright's devising, an accurate working chart. Calculation and observation replaced estimation. The practice of navigation was made increasingly scientific. For the English, not least amongst the fruits of this sea change was the successful colonization of America and the rapid development of a flourishing trans-atlantic trade, for both depended upon the navigational skill of ships' masters and the accuracy of their navigational instruments. Amongst the latter, the most important were their oceanic charts.

[14] J. Napier, *Mirifici Logarithmorum Canonis descriptio, Ejusque usus, in utraque Trigonometria* . . . (Edinburgh, Andreae Hart, 1614).

[15] E. Wright, *A Description of the Admirable Table of Logarithmes: with a Declaration of the most plentiful, easy and speedy vse thereof* . . . (London: Nicholas Oakes, 1616).

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American Steam Navigation in China 1845-1878

PART III

BY EDWARD KENNETH HAVILAND

IV. THE S. S. N. CO. ITS COMPETITIVE POSITION IN 1877

Having concluded an account of the ships and the operations of the Shanghai S. N. Co., we turn to a survey of its position at the time it sold its fleet and properties to the China Merchants S. N. Co. in March 1877 and thereby brought American steam navigation in China virtually to a close. Our emphasis will be on the ships comprising the S. S. N. fleet at that time. For a more detailed treatment of the other aspects of the company's position, the reader is referred to a forthcoming paper of Dr. K.-C. Liu dealing with the last ten years of the S. S. N. Co. as a business enterprise.[285]

It will be recalled that the Shanghai S. N. Co. sold sixteen large steamers to the C. M. S. N. Co. Nine of these were river steamers, the remainder were seagoing. The following table lists for the two groups the later names of the ships, their building dates, and their principal characteristics:[286]

Steamer	*Material*	*Propulsion*	*Engines*
RIVER STEAMERS			
Plymouth Rock (1863) *(Kiangyuen)*	Wood	Side-wheel	1-cyl. vertical beam
Fire Queen (1864) *(Kiangwae)*	"	"	" " "
Fusiyama (1863) *(Hwaiyuen)*[287]	Composite	"	" " "

[285] K.-C. Liu, 'The Success and Withdrawal of an American Steamship Enterprise in China, 1867-1877' (to be published).

[286] Fuller information is given in Appendix III.

[287] According to Chiao-t'ung shih: Hang-cheng pien (see footnote 284). Contrary to what this source implies, *Fusiyama* does not appear to have been rebuilt. The name *Hwaiyuen* was given to the steamer *Calabar* (1864), purchasd later in 1877 (see *NCH*, 22 November 1877 and 17 October

Hirado (1865) *(Kiangching)*	"	"	"	"	"
Fychow (1866) *(Kiangpiao)*	Wood	"	"	"	"
Hupeh (1869) *(Kiangteen)*	Iron	"	"	"	"
Honan (1871) *(Kiangtung)*	"	"	1-cyl. inclined (?)		
Nanking (1873) *(Kiangfoo)*	Composite	"	1-cyl. vertical beam		
Szechuen (1875) *(Kiangchang)*	Iron (or steel)	"	"	"	"
COASTAL STEAMERS					
Shanse (1862) *(Chinsi)*	Wood	Screw	Cross-beam		
Kiangse (1862) *(Haesan)*	"	Side-wheel	1-cyl. vertical beam		
Millet (1869) *(Meli)*	Iron	Screw	–		
Shantung (1870) *(Chintung)*	"	"	Cpd. inverted		
Chihli (1871) *(Haeshin)*	"	"	"	"	
Shingking (1873) *(Haean)*	"	Side-wheel	1-cyl. vertical beam		
Paouting (1873) *(Haeting)*	Steel & Iron	Screw	Cpd. inverted		

For comparison, we list the number of ships of various types on the fleets of the principal shipping companies in China as they were at some representative time in 1877:

RIVER STEAMERS

Company	*Total*	*Wooden*	*Composite*	*Iron or Steel*	*Side-wheel*	*Screw*
S.S.N. Co.	9	3	3	3	9	0
H.K., C. & M.S.B. Co.	5	4	0	1	4	1
China Nav. Co.	5	0	0	5	5	0
COASTAL STEAMERS						
S.S.N. Co.	7	2	0	5	2	5
China Coast S.N. Co.	6	0	0	6	0	6
China Nav. Co.	5	0	0	5	0	5
Douglas S.S. Co.	7	1	0	6	1	6

1878), and this was the vessel that was lost near Ningpo on 29 December 1883, while on a voyage from Shanghai to Hong Kong.

ALL STEAMERS

C.M.S.N. Co.	16	1	1	14	2	14

The trend in the types of ships in service in China can be seen from the following table showing the composition of various fleets in the early or middle 1880's.

RIVER STEAMERS

Company (Date)	*Total*	*Wooden*	*Composite*	*Iron or Steel*	*Side-wheel*	*Screw*
H.K., C. & M.S.B. Co. (1882)	5	3	0	2	4	1
Indo-China S.N. Co. (1883)	5	0	0	5	0	5
China Nav. Co. (1885)	9	0	0	9	5	4

In 1883, the Indo-China S. N. Co., which had by then absorbed the China Coast S. N. Co., had a fleet of ten steamers in coastwise service, all iron or steel screw vessels with compound, inverted, direct-acting engines. The same was true two years later of the seven steamers of the Douglas S.S. Co. and the twelve coastwise steamers of the China Nav. Co., save that *Formosa* (1885) of the former company had a triple-expansion engine.[288]

The following table shows the distribution of ships in various fleets by age expressed as the number of ships in each classification and (in parentheses) as the percentage of the total fleet of the company, computed for the year 1877.

Company	*Under 5 years*	*5-10 years*	*Over 10 years*
S.S.N. Co. (River)	2 (22%)	2 (22%)	5 (56%)
S.S.N. Co. (Coast)	2 (29%)	3 (42%)	2 (29%)
S.S.N. Co. (Total)	4 (25%)	5 (31%)	7 (44%)
H.K., C. & M.S.B. Co.	2 (40%)	0	3 (60%)
Douglas S.S. Co.	3 (43%)	3 (43%)	1 (14%)
China Coast S.N. Co.	4 (67%)	2 (33%)	0
China Nav. Co.	9 (90%)	0	1 (10%)
China Merchants S.N. Co.	7 (44%)	4 (25%)	5 (31%)

From the foregoing tables, together with what is generally known re-

[288] For the purpose of comparison, the coastwise steamers registered as of 1877 in the name of J. S. Swire are counted with the China Navigation Co., although the two interests were not actually merged until later. The China Merchants S. N. Co. fleet is not considered after 1877 because its composition had by then been strongly influenced by the ships absorbed from the S. S. N. Co. Furthermore, it has not seemed desirable to separate the C. M. river and coastwise steamers, as the company had a tendency to use smaller and older seagoing ships on the Yangtsze. Their steamer *Tahyew*, a former Foochow gunboat, is omitted, due to lack of information on her. The former P. & O. steamers *Sultan* (1847) and *Formosa* (1852) of the China Navigation Co. have been omitted from all tables because, although they continued to appear in the register books and although their machinery may not have been removed, they were fitted for and used as hulks. In connection with the accompanying tables, the reader will bear in mind that the various fleets sometimes changed in composition during the year treated, also that the building dates of ships cannot be regarded as precise to within a year.

garding naval architecture and marine engineering of that day, it may be concluded that for larger steamers, such as those treated here, wooden hulls, which had an average life of perhaps fifteen years, were completely outmoded as of 1877. Composite hulls were not entirely so, but it would have been a mistake to build new ones at that date. Paddle wheels, with the familiar beam engines, were still relatively efficient as a means of propulsion for river steamers, but no longer suitable for coastwise ships. For screw steamers, simple engines of all types were practically museum pieces, while compound engines built after 1870 were substantially more reliable and more efficient than those of an earlier date.

In the light of these facts, it becomes clear that as of 1877 the fleet of the Shanghai S. N. Co. was definitely inferior to those of its competitors.[289] If, however, the two oldest river steamers and two oldest seagoing steamers had been replaced by up-to-date tonnage, the composition of the S. S. N. fleet would have been as follows:

	Under 5 years	*5-10 years*	*Over 10 years*
River Steamers	4 (45%)	2 (22%)	3 (33%)
Coast Steamers	4 (57%)	3 (43%)	0
Total	8 (50%)	5 (31%)	3 (19%),

so that it would have compared favorably with the fleets of the other companies. Indeed, had it not been for the loss of *Chusan* (1874), only three new steamers would have been needed.[290] The addition of four new steamers in one year might have been financially impracticable, but it need not have been necessary. Coming events had cast their shadows before them, and while in 1874 the directors had contemplated with confidence the gradual modernization of their fleet,[291] a year or so later the liquidation of the enterprise in the not too distant future had become a definite possibility, the effects of which can be seen in the failure of the directors to order new ships and in the lack of diligence in completing their last steamer, *Szechuen*. The company had substantial resources at this period, as a glance at the tables in the preceding chapter will show, and the replacement of the four vessels suggested here should have been entirely practicable had it been initiated in 1875 or 1876. Moreover, the S. S. N. Co. had an experienced staff and their wharves and godowns were strategically located, so it is hard to see why the company could not have continued indefinitely

[289] Some of the steamers included in the tables were on southern routes and hence did not compete directly with the S. S. N. Co.

[290] While *Szechuen* (1875) turned out to be a replacement for *Chusan* (1874), they were originally both ordered at the same time. See report of the S. S. N. Co. for 1873. *NCH*, 19 March 1874.

[291] See the S. S. N. Co.'s annual report for 1873. *NCH*, 19 March 1874.

in the shipping business had the directors, the agents and the shareholders so wished.

Why, then, did they not so wish? While some of those connected with the S. S. N. Co. were deeply interested in it and devoted to its operation, others regarded it, as did R. B. Forbes, essentially as a speculation, and when profits were no longer at the spectacular levels of the late 1860's and early 1870's, American supporters of the company sought to withdraw their funds and seek more profitable investments at home. And as for the foreign shareholders, if they were disposed to invest in steam navigation enterprises, there were by 1877 other opportunities in China.[292]

Whether or not the Shanghai S. N. Co. could have continued much longer as an American steamship company, in the sense of operating under the American flag, is much less certain. The trend toward iron and steel steamers had put American shipbuilders at a disadvantage and it is known that some of them resented the placing in England or Scotland orders for steamers for the China coast and river trades. There was also an increasing sentiment for manning American ships with American crews and the result was, as pointed out above, laws and regulations less favorable to American shipping in the Far East. Moreover, the officials administering these laws and regulations were by 1877 less sympathetic to American shipping than their predecessors (notably George F. Seward) had been, though there is some reason for thinking that this represented not so much an increase of virtue and integrity as a decrease of interest, vision and (perhaps) ability.[293] In any case, the less favorable political climate must have been an important factor in the decision of those responsible for the management of the S. S. N. Co. to sell out to the Chinese.

V. Augustine Heard and Company

Next in importance to Russell and Co. among the American houses in China was the firm of Augustine Heard and Company, which had been founded by Augustine Heard and Joseph Coolidge, former partners in Russell and Co., in January 1840 and lasted until 1875.[294] A. Heard and Co. considered the formation of a joint-stock company similar to the Shanghai S. N. Co., but never carried out the project, primarily through inability to raise the necessary capital, but also because of a reluctance

[292] Shares of the China Navigation Co. were closely held, but there were ample opportunities for public participation in most or all of the other companies here mentioned.

[293] Certainly the keeping of the consular records of ships' movements, particularly at Shanghai, deteriorated badly in the late 1870's.

[294] A. Heard and Co. failed in April 1875.

to merge their mercantile house into a steamer agency.[295] Nevertheless, Heard and Co. operated a considerable number of steamers, many of them owned either by the firm or by its partners and associates, and at one time or another were interested in almost all of the important steamer routes in China. In addition, they were the proprietors of the Novelty Iron Works at Hong Kong.

Augustine Heard and Co. appear to have entered the steam shipping business at the suggestion of Captain Henry W. Johnson, who, in the latter part of 1859, was having built in America a steamer similar to *White Cloud* for use between Hong Kong, Canton and Macao, and who approached Heards as to whether they would be interested in running her.[296] The steamer in question was *Fire Dart*, a wooden side-wheel vessel of sound type with a tonnage of 678, completed in 1860, her first register being dated 17 November 1860, with Augustine Heard, Jr., as owner and Henry W. Johnson as master. Actually, she was owned in one-twentieth shares, each valued at $5,000. A. Heard and Co. owned thirteen of them and Captain Johnson two; William Endicott, P. L. Everett, H. W. Hubbell, Yoochong and Apoon each had one share.[297] On 10 December 1860, she left for China, arriving at Hong Kong on 20 March 1861 and at Shanghai on 10 April,[298] and she was the second steamer and the first American steamer to reach Hankow after Lord Elgin's treaty. She left Shanghai, 16 April 1861, and arrived back there on 14 May after an exploring expedition enlivened by the fact that the Taiping rebel forces occupied some 250 miles of the river along the way.[299] Thereafter *Fire Dart* plied regularly on the Yangtsze, with some service on the Shanghai-Ningpo line and a couple of trips to Japan, until the latter part of 1865, when her sale for $65,000 (Mexican) was announced.[300] Her purchasers were the Hong Kong, Canton and Macao S. B. Co., who, after operating her between Hong Kong and Macao for five years, sold her to a Manila firm for $60,000.[301] Her career in China was relatively uneventful, but on 4 July 1864 she collided with and sank the bark *Moosmie* near the Kiutoan beacon, Shanghai, and near the same spot she was in collision the following year with the steamer *Titan*.[302]

295 K.-C. Liu, loc. cit., I. 179.

296 Henry W. Johnson to John Heard, 9 November 1859, *HC*.

297 From accounts of *Fire Dart*, *HC*, Vol. 265, p. 27.

298 *OCM*, 1 April 1861. *CRS*, Shanghai.

299 G. H. Preble, op. cit., p. 226. According to *CRS*, Shanghai, she cleared on 13 April for Chinkiang.

300 *NCH*, 2 September 1865.

301 *NCH*, 25 August 1870.

302 *Log Shanghai Pilot Service*, pp. 43 and 46.

Fire Dart was followed shortly by *Shantung*, also built for A. Heard and Co.'s service, a rather small, wooden, side-wheel steamer of 361 tons. Her first register is dated 16 July 1861, with Percival L. Everett as owner and William H. Peele as master. Later she was owned in one-twentieth shares, of which A. Heard and Co. owned three.[303] Under Captain Peele, she left New York on 15 July 1861 for Shanghai, arriving at Hong Kong, 26 November 1861.[304] She was employed primarily, if not entirely, on the Yangtsze until sold at Nagasaki on 4 April 1863 for $135,000 (Mexican) to the Japanese government.[305] By that time, the peak of the traffic on the Yangtsze had passed and a small vessel like *Shantung* must have been poorly adapted for the trade when compared with the larger steamers that had by then appeared, so the company was fortunate in being able to sell her at a good price.

In the late spring of 1862 trade on the Yangtsze was expanding rapidly and Augustine Heard and Co. operated the Russian steamer *St. Theodosius* (or *St. Theodosy*), Captain Kohler, for two round trips between Shanghai and Hankow, presumably under charter until *Cortes* should come out. *St. Theodosius* was the steamer that anticipated *Fire Dart* in reaching Hankow when the Yangtsze was opened to trade after Lord Elgin's treaty.[306] On 1 June 1862, following the arrival of *Cortes*, Augustine Heard and Co. dispatched *St. Theodosius* to Nicolaiffski (Nicolaievsk) and therewith her connection with them seems to have ceased until 1864, when, under the name of *Soochow*, she operated in their Hong Kong-Shanghai service. She was a bark-rigged, iron, screw steamer of 460 tons gross, built at Cork, Ireland, in 1858, and appears in the Bureau Veritas Répertoire Général for 1872-1873 as owned by the Amur Co., St. Petersburg. She was probably built for them or acquired new by them, as they owned her in 1859.[307]

At this time, Heard and Co. were supplementing their fleet with secondhand steamers, as so many of their contemporaries were doing. Largest of these was *Cortes*, a seagoing, wooden, side-wheel steamer of 1,117 tons, which had been built in New York in 1852. After passing through various ownerships,[308] she was purchased in 1860 by the Pacific Mail S.S. Co. and sold in February 1861 to Flint and Holladay, by whom she was chartered

303 When *Shantung* first came out, her total cost was $58,433.94. This was divided into 12 shares, of which Augustine Heard and Co. owned 10; P. L. Everett, one; and W. H. Peele, one. *HC*, Vol. 265, p. 41.

304 *BSL*, 5 February 1862. She had arrived at Singapore on 13 November and left for Hong Kong on the 16th (*CRS*, Singapore).

305 *BSL*, 4 July 1863. *CRS*, Nagasaki. See also *GL* (*NCH*, 27 April 1867).

306 G. H. Preble, op. cit., p. 226, calls her German as of 1861, but this is doubtful.

307 E. Griffin, op. cit., p. 344, footnote 22.

308 For further details of *Cortes*' career, see J. H. Kemble, op. cit., p. 222, and E. Heyl, op. cit., p. 111.

on 4 April 1862 to Augustine Heard and Co. for service in China,[309] sailing from San Francisco for Shanghai under Captain Christopher C. Dall on 14 April 1862. She arrived at her destination, consigned to Augustine Heard and Co., on 15 May and sailed on the 24th for Hankow, arriving back in Shanghai on her return trip on 6 June.[310] *Cortes* had just completed loading for Hankow and intermediate ports and had a full cargo and about Tls. 80,000 of treasure on board when, about 11:30 A.M. on the seventeenth of June, dense smoke was seen to issue from her engine room and the hold. Soon afterwards flames burst out amidships and spread forward, the funnel meanwhile having fallen down among the machinery. Some of the cargo was saved by passing it over the stern and all the 120 boxes of treasure were saved, excepting one which fell overboard. Crews from men-of-war in the harbor fought the fire but succeeded only in retarding it, until finally the steamer, which had been anchored in the stream opposite the Bund, broke adrift and floated with the ebb tide until she grounded on the left bank of the river a couple of miles below Soochow Creek and gradually smoldered away, a total loss. There was, however, no loss of life, and the cargo was said to have been insured.[311] It is known that she was intended to be in the Yangtsze trade, but whether A. Heard and Co. were planning to buy her or not is not now clear.

Shortly afterward, Heard and Co. acquired for $19,375 the small wooden screw steamer *John S. Williams* of 161 tons, previously owned by Byron N. Crary and Spencer H. Crary of New York.[312] On 7 November 1862, she was registered with Percival Lowell Everett, sometime a partner in A. Heard and Co., as owner and Charles Reed as captain. Under the latter, she sailed from New York on 20 December 1862, arriving at Woosung on 8 June 1863.[313] She was shortly renamed *Little Orphan*. (See below.)

Augustine Heard and Co. seem to have been the first company to operate a large steamer sent out to China in pieces, to be re-erected there. The vessel in question was *Kinshan*, a wooden paddle steamer of 850 tons, carpenters' measurement, fabricated by Roosevelt and Joyce, and shipped out, together with her machinery, on the ship *W. B. Palmer*, which arrived at Whampoa in March 1863.[314] *Kinshan*, which was originally to

[309] A certified copy of the charter party is in the Heard Collection, filed under the name of the ship. Such items will hereafter be denoted by *HCS*. The *Shanghai Shipping News* said that she was reported to be owned by Commodore Vanderbilt. However, he had sold her some years before.

[310] *NCH*, 14 June 1862. Also letters in *HCS*.

[311] *San Francisco Evening Bulletin*, 23 August 1862, quoting from the *Shanghai Shipping News*.

[312] The price included an extra propeller and coal. Memo. in *HCS*.

[313] *BSL*, 30 September 1863.

[314] *The Artizan*, 3rd Ser., Vol. 2 (1864), No. 13, p. 20. Her tonnage is given as 1,772 gross, 1,381 net in *MNL*, 1879. See also memo. in *HCS*. The date of launching is not entirely legible.

have been called *Tom Hunt,* had been ordered by James B. Endicott, but he subsequently transferred his interest to A. F. Heard. Upon the steamer's arrival in China, F. H. Haskell, acting for himself, James B. Endicott, Thomas Hunt and Co. and others, agreed to transfer her to A. F. Heard. It was estimated that the cost of the steamboat, completed in China, would be $133,300, of which Heard was to pay $70,300 and Haskell undertook to raise the remaining $60,000.[315] *Kinshan* was set up in Thomas Hunt and Co.'s establishment at Whampoa. Her keel was laid 12 March 1863, and she was launched on 3 May and ran her trials at Hong Kong on 30 October.[316] The following day, an agreement was executed between the shareholders of *Kinshan* and Augustine Heard and Co., whereby the latter were appointed permanent agents of the steamer and were to receive five per cent commission on her gross earnings.[317] *Kinshan* actually cost $170,000 and was at that time owned in 1/34 shares. Augustine Heard and Co. themselves held 3 3/4 shares. The principal remaining shareholders were James B. Endicott and James P. Cook, each five shares; A. A. deMello and Co., four shares; Chong Wo and E Own, each two shares; and J. C. Couper, William Endicott, Wo Kee, Kwang Chang Loong, Kwong Yok Tung, Hinam, See Yong, Jamsetjee Ardasir and Co., P. and D. M. Camajee, and R. Habibhoy, one share each.[318] After the completion of some modifications due to the fact that the steamer drew more water than the builders had promised she would, Augustine Heard and Co. operated *Kinshan* regularly in the Hong Kong and Canton trade for the next couple of years. George Tyson, then president of the Shanghai S. N. Co., was considering her purchase for the latter company's Yangtsze service in March 1865,[319] but nothing came of these plans and she was actually sold not long afterward to the Hong Kong, Canton and Macao Steamboat Co.,[320] who operated her for many years, Heard and Co. taking 230 shares of H. K., C. & M. S. B. Co. stock in part payment.[321]

The Hong Kong, Canton and Macao S. B. Co. was an Anglo-American

[315] Agreement in *HCS.*

[316] Notes in *HCS.*

[317] Agreement between shareholders of the steamer *Kinshan* and Augustine Heard and Co. *HC,* Vol. 269.

[318] List of shares in *Kinshan, HC,* Vol. 265. Earlier, Thomas Hunt and Co. had owned 12 shares and A. Heard and Co., 12¾ shares. No effort has been made in the present paper to follow all changes in the ownership of shares in these steamers.

[319] K.-C. Liu, loc. cit., II, 171.

[320] The accounts of *Kinshan* under A. Heard and Co.'s management were closed on 31 May 1866 (*HC,* Vol. FG2), but the ship was probably transferred to her new owners earlier.

[321] Altogether, A. Heard and Co. held 359 shares of H. K., C. & M. S. B. Co. stock as of April 1867; 109 shares were in the name of John Heard, 125 in the name of Albert F. Heard, and 125 in the name of George F. Heard. *HC,* Vol. FG2.

venture formed in the fall of 1865 with the object of purchasing the steamers *Kinshan, White Cloud* and *Fire Dart,* together with the interest and good will of their respective owners in the carrying and passenger traffic between Hong Kong, Canton, and Macao. The company had an original capital of $750,000 in 7,500 shares. Douglas Lapraik seems to have been a leading spirit in the formation of the company, and subscribed for a hundred shares. Augustine Heard and Co. were appointed general agents, a position they held up until about the time of their failure, and were to receive a commission of five per cent on gross earnings. The first directors were Douglas Lapraik, James Bridges Endicott, Albert Farley Heard (A. Heard & Co.), William Neilson (Olyphant & Co.), Richard Deacon (John Burd & Co.), Edward Pettit (Deacon & Co.), Pallanjee Framjee (P. & A. C. Camajee & Co.), and Quok Acheong.[322] Since the company became increasingly a British enterprise and since much of its history belongs to later years, we shall not follow it further in the present paper.

To return to *Kinshan,* when she first came out she was a typical American river steamer with two stacks and boilers on her guards. In later years she had only one stack and the boilers were placed in the hull, probably to increase her carrying capacity. In June 1876 the explosion of a superheater on board resulted in the death of a passenger. Her two engineers were tried for manslaughter but acquitted. *Kinshan* was still owned by the H. K., C. & M. S. B. Co. in the British *Mercantile Navy List* for 1882, but sold for breaking up that year, her British registry being finally closed on 25 August 1882.

Kinshan was followed by *Kiang Loong,* a wooden paddle steamer of 945 tons. The latter was built by John Englis in New York and received her first document there on 7 October 1862, in spite of the fact that she was sent in pieces to China and re-erected by Thomas Hunt and Co. Her total cost was $289,509.54 and her book value $286,000. As of May 1864 she was owned in 1/52 shares, of which Augustine Heard and Co. held 25½. The remaining shareholders were H. W. Hubbell & Others, four shares; P. L. Everett, Wm. Endicott, G. G. Gray, Yue Chong and Wye Yuen Chong, each two shares; C. A. Fearon, one and one-half shares; and H. Gray, W. H. Peele, W. H. Smith, C. H. Parker, J. H. Everett, R. W. Weston, G. Griswold, R. Deacon, James Sturgis, Chandler Robbins, and Otis Everett, one share each.[323] *Kiang Loong* is listed as arriving at Shanghai

[322] The foregoing information is taken from *Memorandum and Articles of Association of the Hong Kong, Canton and Macao S. B. Co., Ltd.* (Hong Kong, 1865—copy at Essex Institute), dated 19 October 1865.

[323] List of shares in *Kiang Loong,* dated 1 May 1864. *HC,* Vol. 265.

from Amoy on 20 April 1864 in charge of Captain W. A. West,[324] and this seems to have been her first appearance at Shanghai. She was placed in A. Heard and Co.'s Yangtsze trade, where she remained until sold to the Shanghai S. N. Co. in 1867, as described above.

The sale of *Fire Dart* in the latter part of 1865 left Augustine Heard and Co. with only *Kiang Loong* on their Yangstze line, and it appears that they were considering the purchase of Lindsay and Co.'s *Fire Queen* to augment their service. In fact, Heard and Co. dispatched *Fire Queen* for Hankow on 12 November 1865 and again on 10 December and from the latter voyage she arrived back in Shanghai on 21 December, consigned to them.[325] But thereupon her connection with them ceased, as two days later her purchase (from Lindsay and Co.) by the S. S. N. Co. was announced. Augustine Heard and Co. did not increase their Yangtsze service and a little over a year later they withdrew entirely and devoted themselves to the coastwise trade and to the management of the H. K., C. & M. S. B. Co.

Probably the most important of Augustine Heard and Co.'s steamer services was the coastwise route between Hong Kong and Shanghai, although it was conducted to a considerable extent by chartered steamers.[326] Their first sailing on this line of which I have any record was by the British steamer *Lotus*, owned by E. M. de Bussche,[327] which, on her way out from Glasgow, left Hong Kong for Shanghai on 1 September 1862. The following month, the Hamburg steamer *Sir George Grey*, owned by J. C. Godeffroy and Son, began approximately monthly sailings for A. Heard and Co. from Hong Kong to Foochow and/or Ningpo and/or Shanghai, continuing until the end of March 1863 and followed by a single sailing of *Kumsing*.[328] Both these steamers were sold to the Japanese later in the year, *Sir George Grey* for $85,000 to the Prince of Satsuma with delivery in May, and *Kumsing* to the Prince of Hitchigen for $125,000 with delivery in June.[329] After this, we have no information until mid-July, when *Lotus*

324 A. Heard & Co.'s circular, Shanghai, 21 April 1864. She was entered on the 22nd (*CRS*, Shanghai).

325 Shipping intelligence in *NCH*, 18 November 1865, 23 December 1865.

326 Information regarding sailings in A. Heard and Co.'s coastwise services has been obtained from contemporary shipping intelligence, mostly in *NCH;* from Heard and Co.'s Freight Lists, *HC*, Vols. 157-168; and from miscellaneous papers in *HCS*. The building dates and the tonnages of the chartered steamers, together with their ownerships while under charter to Heard and Co. and their final dispositions, where known, will be found in subsequent footnotes.

327 *Lotus* (1861), 595 g. t., was originally owned by E. M. de Bussche and George Tanner, but the latter transferred his half interest to the former. The steamer was sold in 1864 to the Prince of Satsuma for $120,000 and her British registry closed on 14 May of that year. See *GL*, also transcript of British document (hereafter denoted by *BD*). These transcripts have kindly been supplied by the Registrar General of Shipping and Seamen, Ministry of Transport and Civil Aviation, Cardiff.

328 For further information on *Kumsing*, see under "Other American Shipowners," below.

329 *GL* (*NCH*, 27 April 1867). See also M. Paske-Smith, op. cit., p. 223, and *NCH*, 4 June 1864.

began approximately monthly sailings from Hong Kong to Ningpo and/or Shanghai, being dispatched from Shanghai on her southward trip by the English house of Hogg Bros. These continued through March 1864, after which she, too, was sold in Japan (see footnote 327). During this time there were also a few sailings on the line by the British steamer *Rajah*,[330] a former P. & O. vessel, then owned by Hogg Bros. After this, there is a gap of two or three months in our information, but from May to August 1864 the monthly sailings were by *Soochow* (ex-*St. Theodosius*), a steamer built at Cork, Ireland, in 1858 and owned at this time by Hogg Bros. (and their associates), who dispatched her on her southbound trips from Shanghai. On her final voyage in Heards' service, *Soochow* left Hong Kong on 9 August 1864 for Shanghai and on the twelfth stranded in a gale at Owick (or Orwick) Bay, Namoa Island, the crew being saved.[331] The ship herself was later salved and rebuilt at Hong Kong, but never returned to Heard's Hong Kong-Shanghai line.[331] In the spring of 1865 there were some voyages on this line by the British steamer *Ta Pang Nyo*, which later became *Luzon* under the American flag (see below), but detailed information for that year is lacking until the arrival of Heards' own steamer *Suwonada* in the fall.

Suwonada, by far the best known of Augustine Heard and Co.'s coastwise steamers, was a seagoing, wooden, side-wheel steamship of 1,802 tons, built for them in 1864 by John Englis and Son. Her first register was issued at New York, 7 September 1864, with Percival L. Everett listed as owner and Clement P. Jayne as master. While built for Heards' China service, *Suwonada* did not go directly to the Far East, but was used as a dispatch vessel in the Civil War and was later chartered for about four months as a transport and afterwards to the Star Line for New York-New Orleans service until *Guiding Star* was completed.[332] Under Captain Jayne, and with Joseph Hamlin as first mate and James Belknap as chief engineer, *Suwonada* left New York for Hong Kong on 24 (or 25) May 1865. Captain Jayne had a power of attorney to sell the steamer for not less than £60,000 at any time prior to her arrival at Singapore, it being thought that a profit-

Sir George Grey had a British provisional certificate when she arrived at Nagasaki, 5 May 1863. *Commercial Reports from H. M. Consuls in Japan, 1863-1864*, p. 26.

330 *Rajah* (1853), 537 g. t., was sold to George Elliott of London on 28 March 1865 and sunk in collision in January 1875, her British registry being closed on 9 April 1875 (*BD*).

331 *Soochow*, 447 g. t. For an account of her wreck, see *NCH*, 3 September 1864. After being rebuilt, *Soochow* became the Spanish steamer *Emuy*. Subsequently she was successively *Soochow* (Br.), H.I.C.M.S. *Kwang Wai*, and *Soochow* (Br.), being finally lost by stranding at Chingmai Point, near Kuingchow, 28 February 1890 (*BD*).

332 J. H. Morrison, op. cit., p. 458. *Suwonada* was chartered by the Quartermaster's Department from 5 January 1865 to 22 April 1865 at $810.90 per day. See 40th Congress, 2nd Session, House Executive Document No. 337.

able sale might be made at Rio de Janeiro, but the power was not used.[333] The steamer sailed from Rio de Janeiro on 23 June and from Mauritius on 30 July,[334] arrived at Singapore on 15 August, and left on the eighteenth,[335] reaching Hong Kong on 27 August. Her book value at Hong Kong as of 1 September 1865 was Mexican $245,000, in $5,000 shares, of which owners in England and America held nine shares. P. L. Everett, J. H. Everett, W. H. Peele, C. H. Parker, R. W. Weston, G. G. Gray, and H. Gray each had one share, while C. A. Fearon and E. F. Everett owned two shares jointly. The remaining forty shares were held by Augustine Heard and Co. and other China owners, including Captain Jayne, William Endicott, R. Deacon, Apoon, Yuecheong, Sunkee, Hopkee, Yuenkee, Tongmow, Hinam, Ayong, Echow, and Yuensing.[336] Afterward, the shares were 245 of $1,000 each. As of 31 May 1866, A. Heard and Co. held 119 of these; a year later they owned 150. Echow's share was subsequently purchased by Tongkingsing, Jardine, Matheson and Co.'s compradore and later manager of the China Merchants S. N. Co., in order that he might represent the interests of dissatisfied Chinese shareholders.[337]

The *Lytle List* states that *Suwonada* stranded in China 6 September 1865, but, if so, she was readily gotten off, for on 14 September she left Hong Kong for Shanghai on her voyage No. 1 on this route, and she continued regularly in this service, making a round trip every two or three weeks, with very few exceptions.[338] About 1 June 1869, Captain Jayne returned home and his place was taken by Captain Arthur Hamilton Clark. On the twenty-fourth of that month, *Suwonada* sailed from Hong Kong and the following afternoon struck on an uncharted rock off Tongmi Point. As the ship was leaking badly, Captain Clark took her back to Hong Kong and entered the Union Dock at 10:00 A.M on 26 June. In fifteen minutes the leak gained five feet and the ship sank in the dock. For his remarkable feat in bringing the ship to safety, Captain Clark was presented with a valuable piece of plate by the American and British underwriters,[339] and the Chinese merchants of Hong Kong and Shanghai presented the captain with a silken testimonial which is now at the Peabody Museum of Salem.

333 Letter of Everett & Co. to Captain Jayne, New York, 20 May 1865. In *HCS*.

334 *BSL*, 9 August 1865, 20 September 1865, 18 October 1865.

335 *CRS*, Singapore.

336 List of shares in *Suwonada*, *HC*, Vol. 265, pp. 75 ff.

337 See K.-C. Liu, *The Creation of the China Merchants Steam Navigation Company, 1872-1874*, footnote 43.

338 In particular, she was not on the line from early December 1868 to late January 1869.

339 Robert J. Clark, *Arthur Hamilton Clark* (typescript at Peabody Museum, photostat copy at Mariners' Museum).

In late March and early April 1870, *Suwonada* made a trip to Manila in the course of which she stranded on a coral reef near Cape Palauig, off the coast of Luzon, but was refloated after twenty-four hours without damage.[340] In May, she was placed on the route between Hong Kong, Saigon and Singapore under charter to the China Sea, Saigon and Straits S.S. Co. (see below), continuing on this route for almost a year. On her final voyage in this service, she arrived at Hong Kong on 11 April 1871, after which she was thoroughly overhauled, resuming her place on the Hong Kong-Shanghai run on 11 May and continuing there until January 1872. On the twenty-seventh of that month, she left Hong Kong for Shanghai on (one-way) voyage No. 201. Captain Clark was in command, O. Wilson the chief officer, and Charles McLean the chief engineer. At 5:00 A.M. on the twenty-ninth, she entered the Haitan Straits and passed Junk Sail Rock at 7:10. At 7:20, while steering in mid-channel between Pass and Low Islands, where the latest charts indicated from 4½ to 8 fathoms, the quartermaster at the lead giving 9 fathoms, the steamer, running at 13 knots, struck heavily upon a submerged rock and began to sink rapidly. Ten minutes later Captain Clark succeeded in running her on Flag Island sand spit about one mile distant, off Pass Island. The engines were kept turning over and the steam pumps going until the water put the fires out. Shortly afterward, the ship and her people were attacked by pirates, who were repelled by the use of the ship's gun and firearms and withdrew to a distance of about two miles. At 9:30 A.M. U.S.S. *Ashuelot*, which had passed them a few hours earlier, providentially returned, whereupon the pirates dispersed. On the tide rising, *Suwonada* slipped off the beach about 11:00 A.M. and sank, all hands being landed safely. Additional aid was provided the survivors by the steamers *Yesso*, Captain Ashton, and *Pingon*. The ship was a total loss, the hull, engines, boilers, and two hundred tons of coal being subsequently sold as they lay in twelve fathoms of water for a dollar.[341]

A court of inquiry held at the United States consulate at Hong Kong absolved Captain Clark and his officers and crew from all blame and praised him very highly for the coolness and skill which resulted in the saving of all on board.[342] *Suwonada* was regarded as the swiftest and finest steamer on the coast.[343] She was, however, expensive to operate and, al-

[340] *NCH*, 21 April 1870.

[341] The account of the loss of *Suwonada* given here is taken mainly from Robert J. Clark, op. cit., from the log of *Suwonada*, *HC*, Vol. 275, which gives details of her movements from July 1869, and from a certified copy of Captain Clark's deposition, signed at Foochow 5 February 1872 (in *HCS*). See also *NCH*, 8 February 1872.

[342] *NCH*, 29 February 1872.

[343] Rev. E. D. G. Prime, *Around the World* (New York, 1872), p. 140.

though popular, not profitable and she must have been having increasing difficulty in competing with iron screw steamers. Her freight lists indicate that she carried less and less cargo as the years went by and she had very little on board at the time of her loss.

Meanwhile, Augustine Heard and Co.'s Hong Kong-Shanghai service had been augmented by the chartered British steamer *Erl King*, which made her first voyage on the route in February 1867 and continued, making a round trip every two or three weeks, until April 1869, the two steamers together providing a sailing in each direction about every ten days. *Erl King* was originally an iron auxiliary screw steamer of 1,344 tons gross, built at Glasgow in 1865 as a replacement for *Sea King*, which had become the Confederate raider *Shenandoah*. The ownership of *Erl King* in the period she was sailing for A. Heard and Co. was as follows: William Wallace of London, 32/64; A. & J. Inglis (her builders), 16/64; John Wade and H. H. McMinnies (partners) of London, 8/64; and John Pinel (her master), 8/64. These were her original owners. On 27 December 1871 they sold her to William Ross and Co. of Glasgow, who owned her until she was wrecked on Long Reef, Key West, Florida, 16 December 1891.[344] *Erl King* was lengthened in 1874, after which she was a more or less ordinary steamer, and was re-engined in 1881. After leaving Heards' coastwise line, she traded directly between Hankow, Shanghai, Hong Kong, and London, consequent, probably, on the opening of the Suez Canal.

The American steamer *Fung Shuey*, later purchased by A. Heard and Co. as will be described below, made some trips on their coastwise line between Hong Kong, Shanghai, and intermediate ports in the fall and winter of 1867-1868, not long after she came out to China. At this time she was still owned by interests associated with Peele, Hubbell and Co. of Manila.

In the spring and early summer of 1868, another chartered British steamer, *Mona*, made a few trips in Heards' Hong Kong-Shanghai line. *Mona*, an iron screw steamer of 693 tons gross, is of some interest because she had been built in 1863 for the China and Japan (Coast and River) Steam Navigation Co., Ltd., an enterprise floated by the British firm of W. R. Adamson and Co. in 1862 and which lasted for a few years. She was sold on 12 January 1866 to the China Steam Ship and Labuan Coal Co., Ltd., and by the latter on 17 July 1868 to Hugh Pritchard, then of Shanghai and later of Red Wharf, Anglesea, North Wales. *Mona* was sold to the Japanese at Hiogo about the end of 1869 through Adrian and Co., but not delivered until some time later, her British registry being finally

344 *BD*. See also *LRWR*, 4th quarter, 1891.

closed on 3 June 1871.[345] It is said that she was lost not long afterward.[346]

In October 1868, A. Heard and Co. acquired the British iron screw steamers *Indore* and *John Bright* for $100,000 and placed them under the American flag, renaming them *Mars* and *Venus* respectively.[347] They were sister ships of about 1,000 tons gross, built in 1862 at Millwall by C. J. Mare and Co. for the China Mercantile (or Merchant) S. N. Co., a company of Parsee merchants of Bombay (not to be confused with the Chinese China Merchants S. N. Co., which was not formed until 1872).[348] At the time their British registers were closed, 24 October 1868, *Indore* was registered in the name of Framjee Dadabhoy Lalcaca, of Hong Kong, and *John Bright* in the name of Framjee Kaikhusroo Bonajee, also of Hong Kong, but Heards purchased them through the latter.[347] *Mars* left Hong Kong on her No. 1 voyage to Shanghai on 8 November 1868 under Captain Henry J. Green, arriving on the thirteenth (according to copy of the engineer's log in *HCS*), but as she was employed primarily on the Manila line, she will be discussed under the latter. *Venus* seems not to have entered Heards' Hong Kong-Shanghai service until some time in the spring of 1869.[349] Under Captain J. T. Crowell, she operated regularly on that line, providing, together with *Suwonada*, sailings from each terminus every week or ten days until the latter steamer was chartered to the China Sea, Saigon and Straits S.S. Co. in May 1870, *Venus* continuing in the service. Early in 1871 *Venus* was sold to the latter company (see below) and reregistered British, but made some trips between Hong Kong and Shanghai later in the year. The purchasers were not entirely satisfied with the steamer and sold her back to Augustine Heard and Co. after fourteen months. Soon afterward she was sold, and as of June 1872 she was reported at Hong Kong, being fitted up to convey coolies from Macao to Callao.[350] Her British registry was not closed until 3 August 1872, but later that month she was listed as Spanish under the name of *Rosita-y-nene*.[351] She does not appear in the register books after 1875, although she is in the official list of Spanish merchant vessels through 1878.

In March and April 1870 the chartered British steamer *United Service*

[345] *BD*. See also *Commercial Reports from H. M. Consuls in Japan, 1869-1870* (London, 1870), p. 43.

[346] H. Parker and F. C. Bowen, op. cit., p. 200.

[347] A. Heard and Co., Hong Kong, Cash Journal. *HC*, Vol. 17, p. 391; Vol. 18, p. 13. See also *HCS*.

[348] See *Bombay Gazette*, 26 October 1859, quoted in *CM*, 22 December 1859; also Parker and Bowen, op. cit., p. 163, and *Lloyd's Register*, 1865-1866. Transcripts of the registers of these ships have been kindly supplied by the Registrar General of Shipping and Seamen.

[349] According to *BSL*, 10 March 1869, *Venus* sailed from Singapore for New York on 9 October 1868, but I have so far not been able to confirm this.

[350] *NCH*, 29 June 1872.

[351] *URIV*, 1875-1876. *NCH*, 10 August 1872 and 7 September 1872.

made a couple of round trips for Heards between Hong Kong and Shanghai. *United Service* was an iron screw steamer of 903 tons gross, built in 1857, and had earlier been on the fleet of the China Mercantile (Merchant) S. N. Co. Heards had also chartered her in 1869.[352]

In May 1871, *Suwonada* returned to the Hong Kong-Shanghai line and continued to run there until her loss late in January 1872, as related above. Meanwhile there were occasional sailings by more modern British iron screw steamers under charter. *William Miller*,[353] then owned by the Oriental Screw Collier Co., was being advertised by Heards in late March 1871 to sail from Hong Kong to Shanghai, and beginning in August of that year there were sailings by *Sunfoo*, *Duna*, and *Glendarroch*.[354] After 1 January 1872 there were sailings by these three steamers about every two and a half weeks in each direction and, beginning soon after the loss of *Suwonada*, the sailings by *Sunfoo*, *Duna*, and *Glendarroch* were usually every week or so from each terminus through the sailing of *Glendarroch* from Shanghai on 7 June 1872. Following this, approximately weekly service in each direction was maintained by three other chartered British iron screw steamers, *Abbotsford*, *Blythwoode*, and *Trafalgar*,[355] until the latter part of 1872. After this, there was less frequent service by *Trafalgar*, *Glendarroch*, and *Milbanke*,[356] principally the first, through the first half of 1873. There were few, if any, sailings on the line after that.

In the summer of 1868, Russell, Sturgis and Co. and Augustine Heard and Co. arranged with the Spanish authorities at Manila for carrying the Spanish mails between Manila and Singapore and between Manila and Hong Kong at $9,000 a trip on the former route and $5,000 a trip on the

352 A. Heard and Co., Cash Journal, Hong Kong. *HC*, Vol. 18, p. 447.

353 *William Miller* (1869), 889 g. t. Later named *Sappho* and wrecked 17 May 1883.

354 *Sunfoo* (1870), 1,450 g. t. For ownership and final disposition, see text.

Duna (1871), 1,320 g. t. Donald Robert Macgregor of Woodburn, Scotland, managing owner. Sold to Mitsubishi Mail S.S. Co. in 1877 and renamed *Suminoye Maru*. Foundered, 12 July 1908, off Cape Todo, Rikuchu.

Glendarroch (1871), 1,509 g. t. Built for William Ross of Glasgow and sold to John Lacy of Liverpool and others on 21 October 1871. C. W. Kellock of Liverpool became managing owner on 10 January 1872, and Archibald Gray of London on 21 February 1874. Later named *Atjeh* and then *Glendarroch* again. British registry closed 18 July 1894, the vessel having been broken up.

355 *Abbotsford* (1870), 1,035 g. t. Mungo Campbell Gibson of Leith, managing owner. Sunk in collision off the Tyne, 22 October 1906 (*BD*).

Blythwoode (1870), 1,214 g. t. William Milburn of Newcastle-on-Tyne, managing owner. She was later *Gustafsberg*, then *Gustav*, being wrecked on Morups Tånge, 5 April 1915 (*LRWR*, 2nd quarter, 1915).

Trafalgar (1871), 1,514 g. t., Nelson, Donkin and Co., managing owners. Wrecked on the Hasbro' Sands, 14 January 1881 (*BD*).

356 *Milbanke* (1868), 1,296 g. t. Ralph Milbanke Hudson of Sunderland, managing owner. Sunk after collision, 28 July 1874, with the steamer *Hankow* off Dungeness.

Of the foregoing eight steamers, only *Sunfoo*, *Duna*, *Glendarroch*, and *Milbanke* are definitely known to have been chartered, but it is presumed that the others were also. Ownership is given for the period when the steamers were operating for Augustine Heard and Co. and has been furnished by the Registrar General of Shipping and Seamen.

latter. This was subject to confirmation by the government in Madrid and whether or not this was secured is not now clear. In any case, A. Heard and Co. were in need of ships for these routes and they made an offer of $60,000, less 2½ per cent commission, for the wooden screw steamer *Fung Shuey* of 1,004 tons, which was then in the Far East. The plan was for the two firms to take equal shares in the enterprise and then let Peele, Hubbell and Co. of Manila, who had good connections in the Philippines, in for a third.[357] *Fung Shuey* had been built in 1864 at Brooklyn, New York, by Elisha P. Whitlock and was enrolled at New York on 1 July 1864 with Henry W. Hubbell of New York, a partner in Peele, Hubbell and Co., as owner, and he, with various partners, of whom her first captain, J. B. Hildreth, was frequently one, owned her most of her life. For a time following her completion she remained in American coastwise service, being chartered to the Cromwell Line in 1865 and later to the Black Star Line.[358] She was owned briefly, but never operated, by the Merchants and Miners Transportation Co.[359] Under Captain J. S. Watson, *Fung Shuey* came out via Rio de Janeiro, arriving at Singapore on 11 August 1867 and leaving for Hong Kong on the fifteenth.[360] The following year she rescued the survivors of the P. & O. steamer *Niphon* wrecked near Amoy on 23 January 1868.[361] *Fung Shuey* was under the management of Captain Hildreth, and it does not appear that the identity of her principal owners was generally known. In particular, it does not seem to have been known to Augustine Heard and Co. when they purchased her on the terms mentioned above on 15 September 1868.[362] At the time, the steamer was on charter to Olyphant and Co., but she was transferred to Heard and Co. about the beginning of October, shortly after her return to Hong Kong from Shanghai. They contemplated changing her name to *Anda*, but this was never done.[363] Following the sale of *Fung Shuey*, Captain Hildreth returned to America and the ship was put in charge of Captain E. Thebaud, who was succeeded in March 1869 by Captain A. A. McCaslin. While owned by A. Heard and Co., *Fung Shuey* traded mostly between Hong Kong, Amoy and Manila until, under Captain McCaslin, she was wrecked at Amoy on

357 George F. Heard to his brothers, 14 September 1868 and 15 September 1868. *HC.*

358 J. H. Morrison, op. cit., p. 458.

359 F. E. Dayton, *Steamboat Days* (New York, 1928), p. 318.

360 *CRS*, Singapore.

361 *NCH*, 15 February 1868. According to *CRS*, Shanghai, she did not come to this port until 13 May 1868.

362 G. F. Heard to his brothers, Hong Kong, 15 September 1868. *HC.*

363 G. F. Heard to John Heard, Hong Kong, 30 September 1868. *HC.*

25 August 1869,[364] the remote cause of the wreck being the breaking of a hawser made fast to H.B.M.'s gunboat *Cockchafer* while *Fung Shuey* was shifting her berth. This caused the latter steamer to drift on some rocks, where she became a total loss.

A. Heard and Co. also had *Mars*, ex-*Indore*, mentioned above, in their Manila service. Full details of her movements are not available, but she appears to have made several trips between Hong Kong and Shanghai and four or more voyages from Hong Kong to Nagasaki. At least from early 1870 she was operating mainly between Hong Kong, Amoy and Manila under Captain A. A. McCaslin, who had had *Fung Shuey*. Under him, *Mars* left Hong Kong at 5:00 A.M. on 14 June 1871, bound for Amoy with 233 Chinese passengers, general cargo and $7,000 in treasure. At 2:30 A.M. on the fifteenth, she struck on a reef of rocks near Cupchi Point and was totally wrecked, all hands being saved except five Chinese sailors, who were drowned by the swamping of a boat alongside. The loss of the steamer was attributed to a strong indraft of current around Breaker Point and into Namoa Bay, due to a typhoon to the southward.[365] Captain McCaslin was absolved by the court investigating the wreck, although they stated that proper prudence had not been exercised in verifying the ship's position off Cupchi Point.[366]

Augustine Heard and Co. chartered *Shaftesbury*, treated below under Olyphant and Co., for at least one voyage to Manila in 1870 and again in 1871, and in February 1872 had a sailing by *Albay*, then owned by E. M. de Bussche and George Brown and sold the following month to Russell, Sturgis and Co. (see below).

The *North China Herald* of 22 March 1871 quoted the *London and China Express* as saying that 'a fine steamer of 1600 tons is now building on the Clyde, intended for the local lines of Augustine Heard & Co.' This probably refers to *Sunfoo*, which, however, was never actually owned by them, although there is some indication that they may have had a small interest in her.

A much older vessel added to the Heard fleet about this time was *Uncle Sam*, a wooden side-wheel steamer of 1,433 tons which had been built at Williamsburg, New York, as long ago as 1852.[367] She was acquired in 1860 by the Pacific Mail S.S. Co., by whom she was sold in February 1866 to James S. Hermann and Co. of Panama. In the San Francisco newspapers

[364] *Steamboat Bill of Facts* (later referred to as *SBF*), March 1954, p. 11.
[365] *NCH*, 30 June 1871.
[366] *NCH*, 7 July 1871.
[367] For further information on *Uncle Sam*, see J. H. Kemble, op. cit., p. 249.

of 1868, *Uncle Sam* was reported as having left that city for Panama, whence she would proceed to Hong Kong, where she had been sold to local interests.[368] Actually, she appears to have proceeded to Papeeté, having been purchased by one John Brander of that place. He renamed her *Titana*, placed her under the Tahitian flag and in early April 1868 sent her to Hong Kong under Captain Jabez W. Clark in the hope of finding a purchaser for her there.[369] In the meantime, she was to be used for trading and in a letter to Captain Clark dated 4 December 1868, Beilby & Scott, who were agents for the ship at Sydney, New South Wales, wrote to Captain Clark, who held powers of sale from Brander, 'We are much pleased to learn that the *Titana* has at last got good employment and is earning for herself a good character, which we hope may ultimately lead to a profitable sale.' The following April, while Captain Clark was having *Titana* repaired at Hong Kong, he became seriously ill and shortly before his death near the end of the month he gave Augustine Heard and Co., who represented Beilby and Scott at Hong Kong and Shanghai and who were carrying out the work, a power of attorney, permitting them to sell the vessel. In the latter part of 1869, following the completion of the repairs, Heard and Co. were advertising *Titana* for sale, but, although the steamer had been thoroughly reconditioned, no purchasers were forthcoming and on 18 December 1869 they wrote Brander that there were no offers for the ship.[370] At that time she owed them $55,000, the repairs having been more extensive than expected, and as the owner was unable to pay this amount, Augustine Heard and Co. took title to the ship, and renamed her *Orloff*. As of January 1870, Alexander Winsor, Jr., was her captain and William Canning her chief engineer. In February she was sold to the China Sea, Saigon and Straits S.S. Co. (see below) and transferred to the British flag.[371] Owing to the appearance of latent defects in the ship, the sale was cancelled after a short time and the vessel taken back by A. Heard and Co. Evidently she returned to the American flag, as her British registry was closed on 27 October 1870 and a mortgage bill of sale involving her was recorded at the United States consulate general at Shanghai on 30 January 1871.[372] About this time the steamer was renamed *Tokei Maru* (or *Tokei*) and sold to Joseph M. Batchelder, to whom a cer-

[368] Erik Heyl, op. cit., p. 426.

[369] Letter of Beilby & Scott, Sydney, to Captain Clark, 3 April 1868. In *HCS*.

[370] Letter in *HCS*.

[371] The transcript of her British registry as *Orloff* has been obtained from the Registrar General of Shipping and Seamen.

[372] *HMD 31*, I, 602. A copy of the mortgage of the steamer (as *Tokei*) by J. M. Batchelder to A. Heard & Co. is in *HCS*.

tificate of ownership was issued by the American consul at Hiogo. Her later history will be given below.[373]

Augustine Heard and Co. were closely identified with and general agents for the China Sea, Saigon and Straits S.S. Co., an enterprise whose services are indicated by its name.[374] The company was formed and completed its registration on 4 February 1870, and commenced operations in the same month with the steamer *Orloff*, just mentioned, which made several trips between Hong Kong, Saigon and Singapore. The ship was a favorite one with the Chinese on account of her large accommodation for native passengers. However, although sold to the company in good faith as being in perfect condition, she proved to be in need of certain repairs which it was not thought expedient for the company to undertake, so that she was resumed by her former owners, A. Heard and Co., and the sale cancelled. The British steamer *Fusiyama* was then chartered,[375] but on account of her restricted space for passengers she was unsuited for the route and was given up after two round trips. In May 1870 *Suwonada* was chartered from the agents and continued with the China Sea, Saigon and Straits S.S. Co. for about a year. Around March 1871 the latter company purchased *Venus* from the general agents for $95,000 with the intention of naming her *Kinkee* or *Kingkee*, but this was not done, as she had already become popular with passengers as *Venus*. However, *Venus* was found too expensive as to coal to compete with more modern steamers, so the directors of the C. S., S. & S. S. S. Co. arranged with A. Heard and Co. to buy her back at her original price less ten per cent for depreciation during the fourteen months she ran for the former company. For a while following her purchase by the China Sea company Captain Crowell continued as her commander. Captain Arthur H. Clark commanded her later, for a short time in 1872, following the loss of *Suwonada*.

In 1871 the China Sea, Saigon and Straits S.S. Co. chartered the new steamer *Sunfoo* for $7,300 a month.[376] She was a British iron screw steamer of 1,450 tons gross, built in that year and first registered from London, with E. M. de Bussche and C. A. Fearon as owners.[377] The latter was as-

[373] *New York Maritime Register*, 3 July 1872, records her loss, but fails to note later changes in her ownership.

[374] Much of the information on the China Sea, Saigon and Straits S.S. Co. is taken from the minutes of the directors' meetings, *HC*, Vol. 279, and from the letters of A. Heard and Co. as general agents, *HC*, Vol. 420. *Kinkee* was the Chinese name for A. Heard and Co.

[375] *Fusiyama* (1862). In *Lloyd's Register* for 1865-1866, her gross tonnage is given as 898 and her owner as H. Conventry. In *URIV*, 1874-1875, her gross tonnage is given as 942 and her owner as T. W. Stephens. She was sunk after a collision off Finisterre, 3 September 1896.

[376] C. S., S. & S. S. S. Co., annual report, *NCH*, 29 September 1871.

[377] *BD. Sunfoo* was launched on 23 March 1871.

sociated with Augustine Heard and Co. and they themselves seem to have had a small interest in her also, though this does not appear in her registry. *Sunfoo* was available for purchase, but the shareholders of the C. S., S. & S. S. S. Co. did not feel disposed to pay further calls and chartering was proving very satisfactory, so she was only chartered. On 23 December 1872 she was acquired by Guthrie and Co., Singapore, James Guthrie being interested in the Eastern and Australian S.S. Co. *Sunfoo* was purchased by the latter company on 19 September 1873, being their first steamer and arriving at Sydney on 17 December 1873.[378] On 10 March 1874 she was lost by stranding on Reef Island, a small island near the Asses' Ears, about 27 miles SSW of Hong Kong.[379]

In June 1872, the China Sea, Saigon and Straits S.S. Co. chartered *Blythwoode*, which has already been mentioned, along with *Sunfoo*, as operating for Augustine Heard and Co. The C. S., S. & S. S. S. Co. failed, however, to develop into a profitable enterprise, and at an extraordinary general meeting of the shareholders held on 13 May 1873, George F. Heard, the chairman, proposed that the company be voluntarily wound up. E. J. Sage, another director, seconded the motion, which was thereupon unanimously carried, G. F. Heard being appointed liquidator. Some account of the company's finances will be found in Appendix IV.

Augustine Heard and Co. also owned and operated the following tugs or small steamers used principally for towing: *Meteor, Washington, Bunker Hill, Little Orphan*, and *Rose*.

Meteor was an American steamer of 163 tons which Augustine Heard and Co. dispatched under Captain M. L. Woodward from Singapore for China in April 1862.[380] She reached Shanghai in June and for the next couple of months was operating between Shanghai and Foochow consigned to them. Whether they had a financial interest in her or were operating her on consignment is not now clear. By August her owner was given as P. Conklin, but Captain Woodward continued as her master, being replaced by Captain McCaslin later in the year. She arrived at Shanghai from Foochow on 17 January 1863 and seems then to have been laid up

[378] W. Lawson, *Pacific Steamers* (Glasgow, 1927), p. 180. D. Gregory, *Australian Steamships Past and Present* (London, 1928), p. 214.

[379] *New York Maritime Register*, 18 March 1874. *NCH*, 19 March 1874.

[380] According to A. Heard & Co.'s freight books, *Meteor* left Singapore on 17 April 1862 and Hong Kong on 17 May. She arrived at Shanghai from Foochow on 6 June. (*CRS*, Shanghai.) The consular returns state that she was built in Siam in 1858, but this may have been a rebuilding of the steamer *Meteor* first registered at Glasgow in 1850, which was later owned at Sydney, N. S. W., and arrived at Shanghai from Sydney on 27 December 1856 under the British flag, consigned to Dent, Beale and Co., who were empowered by her owner, William Fanning, to sell her in China for not less than £4,000 (*BD*).

there until 16 January 1864 when she cleared for Nagasaki.[381] Apparently she did not return to China and in March of that year she was sold at Hakodate to the Japanese government for $47,000, being lost on the Tokugawa expedition to Yesso in 1869.[382]

Washington was an iron paddle-wheel steamer of 193 tons gross, built at Leith in 1844. As of 1861 she was employed as a tugboat at Sydney, New South Wales, and was authorized to carry 350 passengers.[383] She was acquired, apparently early in 1862, for £5,000 sterling, with the following owners: Captain Sullivan, £1,000; Russell and Sturgis, £2,000; Augustine Heard and Co., £2,000; the agreement being that she was to be put in Captain Sullivan's name, but he to transfer her to the names of either of the other owners, if desired, on her arrival in China. Moreover, the other owners were to have the right to buy out Captain Sullivan's interest on paying him 25 per cent profit on the cost of his share. *Washington* arrived at Shanghai 23 June 1862 from Sydney and was subsequently transferred to the American flag. She was intended as a tugboat for Shanghai and the Yangtsze River and under Captain Atwell plied regularly on the latter, consigned to A. Heard and Co., going at times as far up as Hankow. A. Heard and Co. were advertising her for sale in July 1863, and presumably sold her about this time. In 1865 she was reregistered British at Hong Kong under the name *Gorilla*. The following year she was sold foreign and her British registry closed on 14 July 1866.

Bunker Hill was a wooden screw vessel of 63 tons, built at East Boston in 1861 for Captain Daniel Cavanagh. Under his command she left Boston on 7 October 1861 and arrived at Shanghai, consigned to A. Heard and Co., on 14 June 1862.[384] On 18 July 1862 she was purchased for Tls. 20,000 for the account of the following owners: J. A. Wheelock and H. Hancock (partners), one fourth; William Endicott, one fourth; A. Heard & Co., one fourth; D. Cavanagh, one fourth. Captain Cavanagh's share was shortly transferred to John Heard. *Bunker Hill* was to be managed by Augustine Heard and Co. for a commission of five per cent on gross receipts. A 1/32 share in her was sold at auction on 22 July 1865 for Tls. 200. In 1868 she is listed with Primrose & Co. as agents and in 1870-1873 with J. S. Baron as agent, but Heard and Co. evidently retained an interest in

381 Movements of *Meteor* are taken from *CRS*, Shanghai, Nagasaki.

382 *BSL*, 9 July 1864. *Commercial Reports from Her Majesty's Consuls in Japan, 1863-64* (London. 1865), p. 35. For her loss, see *NCH*, 16 February 1869.

383 According to a memorandum from Francis Mitchell to A. Heard and Co., dated at Sydney, 1 August 1861. *HC*.

384 *NCH*, 21 June 1862.

her, as she appears in their accounts as of 31 December 1874.[385] *Bunker Hill* sank at her moorings off Boyd's Dock, Shanghai, in a typhoon, 23 August 1883, but was afterwards raised.[386]

Little Orphan, formerly *John S. Williams* (see above), was a vessel of 161 tons which had arrived at Shanghai on 8 June 1863. Like *Bunker Hill,* she flew the American flag. She went to Hong Kong in 1865 and was sold there (at a profit) in 1866.[387] As of March 1866, she was owned in 1/28 shares. A. Heard and Co. owned eleven; William Endicott, four; P. L. Everett, three; and Joseph Belknap, four.

In 1865, Augustine Heard and Co. had a one-fourth interest in an American steamer called *Rose* of 134 tons, then trading on the lower Yangtsze and to Ningpo.[388] This seems to have been not the *Rose* owned for a time by James B. Endicott, but a somewhat larger vessel, formerly called *Mandarin,* which had been built at Hong Kong or Macao in 1860 (see below under A. L. Freeman).

While the present paper is concerned primarily with American steam shipping on the coast and rivers of China, it may not be out of place to mention that Augustine Heard and Co. had some connection with overseas, including transpacific, steam shipping as well. From the letters of George F. Heard it is apparent that in the spring of 1869 Heard and Co. were considering the purchase of *Erie* and *Ontario,* built at Newburyport in 1867, with a view to running them in transpacific service in competition with the Pacific Mail S.S. Co., but this project never developed.[389]

Three years later Heards appear from an early prospectus of the China Trans-Pacific S.S. Co., Ltd. to have been interested in this company. Augustine Heard, Jr., was to be a director. A later prospectus does not contain his name,[390] and it may be that A. Heard and Co. did not finally take any part in the enterprise. The China Trans-Pacific S.S. Co., in which E. M. de Bussche was prominent, operated the new steamers *Vancouver* and *Vasco de Gama (sic)* from early 1874 until September of that year, when it collapsed, the steamers being chartered to the rival Pacific Mail S.S. Co. for fifteen months and subsequently (1878) sold to the Royal Mail Steam Packet Co. and renamed *Tamar* and *Trent* respectively.

At about this same time, A. Heard and Co. were agents in China and Japan for, and seem to have been financially interested in, the New York,

385 John Heard in account with Augustine Heard and Co. Book IV, p. 95. *HC.*

386 *Log Shanghai Pilot Service,* p. 108.

387 *HC,* Vol. FG2, p. 111.

388 Information on *Rose* has been obtained from *HCS* and from *CRS,* Shanghai.

389 George F. Heard to his brothers, 8 March 1869. *HC,* Vol. FM10.

390 *HC.*

London and China S.S. Co., Ltd., another of de Bussche's ventures.[391] In 1874 this company acquired the former P. & O. steamer *Bengal*, which had been built in 1853, and had built for themselves in 1873-1874 the iron screw steamers *Mongol* and *Tartar*. In 1874 the two latter steamers were chartered to the Australasian and American Mail S.S. Co.[392] *Mongol* was lost by striking a rock near the Ninepins, off Hong Kong, on 12 December 1874 with the loss of seventeen lives.[393] *Tartar* was sold in 1878 and became *Europe* of Fraissinet and Co., broken up in 1894. *Bengal*, according to her register, was owned by the New York, London and China S.S. Co. until 1883, when she was sold to Gellatly, Hankey and Co., in whose service she was when wrecked on Milton Reef, Bawean Island, Java Sea, on 2 March 1885.[394]

Augustine Heard and Co. occasionally chartered steamers to go directly to New York,[395] and it is interesting to note also that for several years in the early 1870's they were agents at Foochow for Alfred Holt's Blue Funnel Line.

Following the Civil War, the United States government sold the revenue cutters *Ashuelot*, *Cuyahoga*, *Kankakee*, *Kewanee* and *Pawtuxet* for private operation and they were shortly sent to the Far East, evidently with the intention of selling them to the Japanese, who were at that time buying secondhand tonnage extensively.

Ashuelot (not to be confused with the iron U.S.S. *Ashuelot*, which was on the China coast at this period and lost near Amoy, 17 February 1883) was a wooden side-wheel steamer of 323 tons, built in 1863. In her first register, dated 26 July 1867, the owners are given as Edward S. Hedden, I. Cutter Fuller, Henry Lawrence, and James A. Smith, all of New York, and William Endicott of Salem. Under Captain Joseph Rowse, she left New York, 27 July 1867, was reported at Hong Kong 25 February 1868, and arrived at Shanghai on 13 March.[396]

Kankakee, a wooden paddle steamer of 314 tons, built in 1863, was also registered in New York on 26 July 1867 with the same owners as *Ashuelot*, and Samuel Yeaton as master. Under him she left New York 27 July 1867 and was reported at Hong Kong on 25 February 1868.[397]

391 See *NCH*, 23 January 1873, which quotes from the *London & China Express*.

392 W. Lawson, op. cit., p. 168.

393 *NCH*, 24 December 1874.

394 *Nautical Magazine*, LIV (1885), 655.

395 E.g., *Killarney* (1871), 1,701 g. t., in 1874. *HC*, John Heard in account with A. Heard and Co., Book IV, p. 72.

396 *NCH*, 18 March 1868. She entered on 14 March (*CRS*, Shanghai).

397 *BSL*, 7 August 1867, 8 April 1868. 25 February 1868 may not represent the date of arrival of *Ashuelot* and *Kankakee*.

William Endicott appears to have been the managing owner of these two steamers, Augustine Heard and Co. undertaking to operate and sell them on commission. In addition, Heard and Co. had a steamer of their own for sale. This was the former revenue cutter *Pawtuxet,* which on 7 August 1867 had been acquired at auction by Everett and Co., evidently acting as agents of A. Heard and Co., with the intention of sending her to China.[398] She was a wooden screw steamer of 231 tons which had been built at New York in 1864. On her way out, she left New York on 24 September 1867 and arrived at Shanghai from Batavia on 13 March 1868.

While the intention was to sell all three steamers to the Japanese, this proved unexpectedly difficult to do. George F. Heard, writing to his brothers from Nagasaki on 10 July 1868, says, 'I have laid the *Pawtucket* [*sic*] up and discharged everybody I could and should have done the same for the *Ashuelot* had it not been pretty probable that she will soon be sold to the Japanese. . . . There isn't much chance for the *Kankakee.*' Writing from Hong Kong on 27 October 1868, he says, 'We can't sell the *Pawtuxet* nor the *Ashuelot* nor the *Kankakee.* . . . The *Ashuelot* is now on a charter to the west coast [of Japan]. . . . The *Pawtuxet* has just returned [to Yokohama] from a similar cruise unsold. The *Kankakee* is still here.'

Meanwhile, William Endicott was getting restless, and on 21 January 1869 George F. Heard writes from Hong Kong, 'I see that Endicott has been at you again about those gunboats. . . . I don't know why the gunboats have not been sold, other vessels and many of them, too, have been sold in Japan and it makes us feel badly that we can't do as well.' The following month, nevertheless, *Kankakee* was sold through Franklin Blake to the Mikado for $70,000, half cash and half in three months. *Ashuelot* was still trading, but not making money, due to the high price of coal.[399] However, Blake sold her to the Japanese in March, also for $70,000. In Record of American and Foreign Shipping for 1870, *Ashuelot* is listed in the name of Wetmore, Cryder and Co. Later she is listed as Japanese, Wetmore and Co. agents. Wetmore, Cryder and Co. appear never to have owned her, possibly they managed her for the Japanese.

Augustine Heard and Co. apparently never did sell *Pawtuxet,* as a 33/63 interest in her is carried on their balance sheet as of 31 December 1874. In the meantime, she was trading in the Far East, probably on charter, as opportunity arose. She was reported as having arrived at Hong Kong from Turon on 18 June (1874 ?),[400] and was caught at Hong Kong in the

[398] *BSL,* 10 August 1867.

[399] George F. Heard to his brothers, Hong Kong, 8 March 1869. *HC,* Vol. FM10.

[400] *Hong Kong Times Mail Supplement,* 12 November 1874.

typhoon of 22-23 September 1874 and dismasted.[401] As of June 1875 (after A. Heard and Co. had failed) she was still in port,[402] and this is the last information we have of her.

The remaining two revenue cutters had various owners or groups of owners, but Colgate Baker, a partner in the American firm of Smith, Baker and Co. at Yokohama, was the original owner of both after they left government service and his name almost invariably appears in subsequent groups of owners, so that these steamers were evidently a venture of Smith, Baker and Co. or their associates. *Cuyahoga* was a wooden screw steamer of 306 tons, formerly *Santa Ana* (or *General Santa Anna*), originally built in 1854 by J. A. Westervelt and Co. for the Mexican government. Under a Captain Johnson, she left New York for Yokohama on 9 October 1867. *Kewanee* was a wooden screw steamer of 237 tons, built at Baltimore in 1863.[403] Under Captain J. E. Potter, she left New York on 14 September 1867 and arrived at Yokohama, 31 May 1868.[404] As of August 1868, *Kewanee* was lying in port at Yokohama, destination uncertain. Not long afterward, Smith, Baker and Co. sold both steamers to the Japanese government, *Cuyahoga* for $86,000 and *Kewanee* for a price not stated.[405]

The Japanese did not have very good luck with their purchases. *Ashuelot* was renamed *Taka Maru* and sunk almost immediately while in Enomoto's fleet at Hakodate, and by March 1869, *Kankakee*, *Kewanee* and *Cuyahoga* were reported broken down.[406] The following month, *Kewanee* was blown up while taking in powder, twelve men being killed and thirteen seriously injured.[407]

[401] *NCH*, 8 October 1874.

[402] *Hong Kong Times Mail Supplement*, 19 June 1875.

[403] *Record of American and Foreign Shipping. Lytle List* says 1853. List of ships built by John A. Robb (at Maryland Historical Society) says 1861.

[404] *BSL*, 25 December 1867 and 4 November 1868.

[405] A list of steamers sold to the Japanese between 1 January 1868 and 29 July 1869. Manuscript copy among Heard Papers.

[406] George F. Heard to his brothers, Hong Kong, 18 March 1869. *HC*, Vol. FM10. See also *NCH*, 26 August 1869.

[407] *NCH*, 22 April 1869.

To be continued

Notes

Additional Notes on *Star of Lapland* ex *Atlas*

Since the original manuscript was finished concerning the history of this ship, additional information concerning Captain John Collins Amberman has come to light.

The following information in the records in the National Archives was by Mr. John Lyman of Washington, D. C. Mr. John C. Amberman signed on *Atlas* as mate at $60 per month on 14 July 1904, in New York. He was a naturalized citizen, born in Nova Scotia, age forty years, light complexion, brown hair, height 5 feet 9 inches, with a wife in Nova Scotia getting an allotment of $30.

The second mate was W. J. Moran, age forty-two, born in New York, signed on at wages of $40 per month.

Third mate was H. H. McLeod, age twenty-eight, born in Maine, signed on at $25.

Petty officers were a Norwegian bos'n at $23, and a Swedish sailmaker at $25. The Japanese cook got $30. There were twenty seamen at $18; three Germans, two Brazilians, three Americans, two Danes, two Russians, three Norwegians, and one each Finn, Nova Scotian, Scot, English and Chilean. Three boys at $5 ages sixteen, eighteen and twenty-two years; one an American, one German and one Norwegian; one indentured apprentice born in Massachusetts.

Thus, there is no question as to when and in what capacity Captain Amberman joined *Atlas*.

Today, 1956, Captain Amberman recalls the incidents that lead up to his assuming command of *Atlas* in Shanghai. As related in the account of *Atlas*' call in the Orient late in 1904, Captain Reuben Lawrence was then master of the Standard Oil Company's four-masted bark *Acme* lying in Japan. Captain Lawrence committed suicide and was succeeded in command by his mate, Mr. Amesbury. On 8 December 1904 Captain Amesbury took *Acme* to sea, bound for Hong Kong, arriving at the Chinese port on the nineteenth. It was after this arrival that, for some reason, Captain A. F. McKay, then master of *Atlas* in Shanghai, was ordered to change commands with Captain Amesbury of *Acme*. This was done, and Amesbury went to Shanghai to take command of *Atlas*.

Captain Amesbury had been in command of *Atlas* for only five days when he too shot himself. Captain Amberman recalls that he was on the forecastle head when the steward came running forward saying the captain had shot himself. Amberman found him lying on the floor in the saloon; the revolver had been so close to his body that the sound of the report had been muffled. Amesbury left a note saying: 'Ralph, take care of Fannie.'

It follows, without much question, that Amberman was appointed to command of *Atlas*, though the exact date is not readily available. It was probably in very late December 1904 or January 1905. Whether he obtained a new chief mate as soon as possible, or waited awhile is not known, but the logbook reveals evidence that a new mate joined the ship on 1 February 1905. Finally on 5 March 1905 *Atlas* sailed from Shanghai and arrived at San Francisco on 9 April 1905. Captain Amberman's name is clearly seen in the San Francisco Customhouse records as being master of the ship on her arrival at this time, so the sequence of events seems to be somewhat clarified.

HAROLD HUYCKE

Le Musée de la Marine

There are a few small errors in Mr. Spratt's account of the contents of this

Museum, caused probably by relying too much on labels or catalogue entries.

The Louis XV model does not represent *Royal Louis* of 1692. It was made somewhere about 1715 and is probably an imaginary ship. This was mentioned in *The Mariner's Mirror* in 1932 (p. 330), the information coming from French sources, and the plans of the 1692 ship were published in the same Journal in 1942 (p. 246).

To say that *Réale* galley had '50 oarsmen' must be a slip. The model shows twenty-six oars a side and each was, I think, worked by five men. The 'vaisseau à rames,' if its date is really 1785, was certainly nowhere near being the last oared warship. Both Sweden and Russia were building similar 'rowing frigates' well into the nineteenth century.

Liberté and her sisters may have been the last French ships to be built with ram-bows, but they were battleships, not cruisers. Finally Charcot's *Pourquoi-pas* is best known for her voyages to Antarctica. Probably 'Greenland' is a mistake for 'Graham Land.'

R. C. ANDERSON

Sea Otters, North and South

A note in Neptune for January 1955 (Vol. XV, No. 1), mentions the arrival of *Hope* of New Haven at Sydney, N. S. W. on 2 November 1801, with 6,600 sea otter skins. From the Journal of *Diana* of New York (James McCall master) in the Essex Institute, Salem, it appears that *Hope* arrived in West Point Harbour, Falkland Islands on 2 May 1800, and sailed for South Georgia on 17 October 1800.

Hope had put into the River Plate before going on to Sydney, probably to dry her sealskins. It seems clear that she had not been to the northwest coast of America before reaching Sydney. The otter skins must therefore have been obtained on the coasts of Tierra del Fuego or Patagonia.

There is a reference to sea otter hunting in Tierra del Fuego in more recent times in Rockwell Kent's autobiography. He met at Ushaia a sealer and otter hunter named Christopherson who had spent many years in Tierra del Fuego.

Europeans seem to have discovered the northern sea otters as far back as 1733, nearly half a century before Captain Cook's men bartered for otter skins on the northwest coast. The Journal of Miguel Venegas states that at Cedros Island off Lower California (28° N.) they found such numbers that the seamen killed twenty of them. Father Sigismundo Taraval sent some of the skins to Mexico.

It is reported that later the Spaniards employed the Indians to hunt otters, paying three or four reals each for the skins. However the rush for the skins of the northern sea otter did not begin till it was found that they fetched very high prices in China. The earlier traders secured their skins well to the northward; later Captain James O'Cain and others brought Aleuts down to hunt sea otters off the California coast.

THOMAS DUNBABIN

Maori Heads at Nantucket

Whaling vessels brought back many odd things to New England. Perhaps the queerest were those works of art, the 'Maori heads,' with their finely tattooed faces. There was quite a stir in medical and scientific circles as far away as Boston when *Independence* of Nantucket came to her home port in June 1822 with several of these heads.

On 5 July 1822 Benjamin Rotch wrote at Nantucket a letter now in the library of the Massachusetts Historical Society, to Dr. J. C. Warren of Boston. He was answering a letter from Dr. Warren and told the doctor that one of the heads in question was in the hands of a barber who asked $150 for it. The barber said that Dr. Miller had offered $60 for it but that that was not nearly enough. The mate of the ship, Gibbs or Gibson, had one but Rotch did not know what he had done with it.

Rotch said that he had tried in vain to borrow a head that Dr. Warren might inspect it. This was the head of a chief who had visited *Independence* seventeen days before his head was offered for sale. It was in fine condition.

On 26 July Rotch wrote from New Bedford: 'I have, with the kind aid of Dr. Reid, procured for you the finest head of a New Zealander that has been imported here; there was so great a demand that I could not obtain it for a less price than $20 & think myself very fortunate to secure it for that sum as I believe there are agents employed for several most eminent surgeons & physicians who it is probable from intimations given would give $100 for the head.'

Dr. Reid had secured an inferior head for himself and had promised to show this to Dr. Warren. The head that Rotch had secured was apparently that of the chief mentioned in his first letter. He ended his letter with the words: 'I avail myself of the excellent opportunity to convey the venerable old chief to you by my particular friend, Professor Grierson of Newport.'

THOMAS DUNBABIN

A Note on the Banks Baton

Considerable light is thrown on the origin of and how the Banks baton got to Banks Island, described in 'Mystery of Banks's Baton' (American Neptune, January 1956, p. 62), by a later journal of the same Archibald Menzies whose letter is quoted. Menzies was the naturalist of the Vancouver expedition, of 1791-1795, which mapped the northwest coast of America for the first time. His journal gives one of the best accounts of that expedition up to February 1794. Unfortunately, it exists in complete form only in manuscript now in the British Museum and the part subsequent to that date is missing. In the entry for 18 July 1793 is found the following passage:

One day we had been visited by a powerfull Chief named Siaa & a large party of the natives from Nepean's Sound, one of whom had suspended to his neck by a thong a warlike weapon of solid brass about 15 inches long, somewhat in the shape of a New Zealand Pata-potoo, that greatly excited our curiosity, & on examining it, we found engrav'd on one side of the blade an escutcheon within which Jos. Banks Esqr was inscrib'd, but these embellishments were nearly effac'd through the attention of the Natives in keeping the instrument clean, hence the necessity on such durable tokens left amongst Indians of having the inscriptions deeply impressed, it would also be very satisfactory to announce the date when & if possible the place where left, by which a stranger might be enabled to know the time & distance it had travelld & thereby ascertain the line of communication between distant tribes, for we were then pretty certain that we were the first Europeans that had had any direct intercourse with the Natives on this part of the Coast, we therefore could not help being surprizd at finding the instrument in so remote a corner; Some conjecturd that it had travelld across the Continent from the Coast of Labradore, which it was known the donor had visited, while others supposd that it might be left by him at some of the South Sea Islands & from thence brought to this coast by some of Capt. Cook's people. On mentioning this circumstance to Sir Joseph Banks when we arrived in England after that voyage, he informd us that he had given several of these instruments to Capt Clarke when he went out on his last voyage, it is probable therefore that it had been left by him at Nootka & from thence by the spirit of Commerce & barter between the different tribes had travelld through the interior parts of the country to this place a distance of near three hundred miles even the nearest way it could come.

The Captain Clarke named by Menzies was Captain James Clerke, who commanded *Discovery* on Cook's third voyage and died during the course of that voyage. Nepean Sound is in British Columbia, adjacent to and formed in part by Banks Island. This suggests that the baton seen in 1793 was the same one that Menzies saw while he was in the *Prince of Wales* five years earlier. It seems strange that neither he nor Sir Joseph Banks appear to have recalled the earlier sighting while discussing the later one. Both were avid students of natural history and it could be expected that they would almost instantly link together the two sightings of such an unusual and personal object.

BERN ANDERSON,
REAR ADMIRAL, U.S.N. (RET.)

Who Found Foveaux Straits?

A note in Volume I of the Hakluyt Society's edition of Cook's Journals, lately issued (*The Voyage of the Endeavour, 1768-1771*, edited by J. C. Beaglehole, Cambridge, 1955), states that Foveaux Straits, which separate Stewart Island from the South Island of New Zealand, were discovered and charted in 1804 by O. F. Smith, an American, when in search of seals. Cook had assumed that Stewart Island was part of the South Island.

O. F. Smith reached Port Jackson, according to the Sydney shipping lists, on 29 July 1804, in command of the thrity-five-ton schooner *Independence*, which had been built at Kangaroo Island, South Australia, by the crew of the ninety-nine-ton brig *Union* of New York, owned by Fanning & Co. However, when *Independence* sailed from Port Jackson again on 13 August the master's name is given as Josiah Townsend.

O. F. Smith, presumably the same man, appears again in the shipping lists in 1810 as master of *Aurora* of New York. But when *Aurora* sailed in August 1810 for the newly discovered sealing ground of Macquarie Island S. R. Chace appears as master. Smith is given as master in the entry of the return of *Aurora* from Macquarie Island. It looks as if Chace was thought to have more knowledge of the southern sealing grounds.

Robert McNab concluded, in his *Murihuku and The Southern Islands* (Invercargill, N. Z., 1907), that Foveaux Straits was discovered in 1808 or 1809, probably by William Stewart who gave his name to Stewart Island. Foveaux became acting governor of New South Wales in July 1808. In 1904 he was commandant at Norfolk Island. As such he did business with Captain Pendleton of *Union* which carried supplies from Norfolk Island.

THOMAS DUNBABIN

Cunard Cocktails in 1847

In the spring of 1847, a Harvard senior, Andrew Cunningham Wheelwright[1] of Boston, obtained a leave of absence from the faculty to accompany two of his uncles on a voyage to Europe, sailing from East Boston on 16 May 1847 in the Cunarder *Caledonia*. The journal of this trip, which has recently been given to the Massachusetts Historical Society by the writer's daughter, Miss Mary Cabot Wheelwright, includes a reference of 26 May that should be of interest to students of transatlantic bartending.

'The "Cocktail Club," an institution founded by a Mr. Menlove of South Carolina on the second day of our passage for the prevention of seasickness and the promotion of an appetite for dinner, was dissolved this day for want of a person to stand treat. The cocktail was composed of brandy and water about half and half with sugar, nutmeg and a touch of cordial bitters; the dose one wine-glass full ½ an hour before dinner. It was by no means unpalatable and several of the ladies became honorary members of the Club.'

This drink, it might be noted, corresponds to the *Oxford English Dictionary* definition of a cocktail as 'a drink, consisting of spirits mixed with a small quantity of bitters, some sugar, etc.' Although 1847 sounds early for cocktails, the *O.E.D.* traces the word back to 1809 in Washington Irving's *Diedrich Knickerbocker*, where it is appropriately included among 'recondite beverages.'

WALTER MUIR WHITEHILL

[1] Mr. Wheelwright, who died in 1908, was, among other useful things in Boston, responsible for the preservation of the fine meetinghouse of the West Church at the corner of Cambridge and Lynde Streets and its conversion into the West End Branch of the Boston Public Library. See Walter Muir Whitehill, *Boston Public Library, A Centennial History* (Cambridge: Harvard University Press, 1956), pp. 125-126.

Documents

Micajah Lunt, Jr.

Micajah Lunt, Jr., born in 1796, was the oldest son of Micajah Lunt, a successful merchant and shipowner in Newburyport. It was the natural thing for the young Micajah to go to sea, and his first voyage was in 1813 in the armed brig *Argus*.

On the voyage he kept a journal, which is largely a ship's log, in which he made manifest the knowledge of navigation he had learned in his father's counting room on Ferry Wharf in Newburyport. The calculations and navigation details have been omitted in the following copy of the journal, but Micajah's spelling, capitalization and underlining of what he considered important have been retained. Micajah's next trip was on a larger privateer, the brig *Essex*, twelve guns, under Captain William Nichols of Newburyport. On this trip *Essex* captured the British Letter of Marque *Carisbrooke Castle* of sixteen guns, a prize of great value. Captain Nichols boldly summoned the British ship to surrender and when asked to what ship, replied, 'United States brig *Essex*.' There was a powerful ship of that name in the Navy, so the British captain was deluded into surrendering.

Two years after his first voyage Micajah Lunt, Jr., commanded the brig *Olive* and made a voyage to Nantes, France. A captain then not only managed his ship and sold his cargo but purchased the return cargo—a great trust to give to a boy of nineteen.

Micajah continued going to sea as a merchant captain until about 1830, when he retired with what was in those days a competency. During his years at sea he spent much of his time learning the habits, customs and languages of the people of other countries, and at the same time had an excellent business training.

After his retirement from the sea he acquired large means as a successful merchant and shipowner. He was instrumental in organizing a whaling company of which he was one of the chief managers. He subsequently took an active part in extending cotton manufacturing, and was for twenty-five years president of the Bartlett Steam Mills, which was in its day one of the largest cotton manufacturers in the country. He was among those who, at a later period, exerted themselves to open railroad communication from Newburyport into the interior, and was for many years a director of the Eastern Railroad. Also for many years he was president of the Merchants National Bank and one of the earliest presidents of the Institution for Savings. Although he was not especially interested in politics, he was at one time elected to the legislature of the Commonwealth as a Senator from Essex County.

His wealth and social position gave him a leading influence in the town and its general welfare. Great confidence was placed in his judgment and ability, and he was highly esteemed for his integrity. Although crippled by disease in his later years, he retained his interest in the affairs of his native city until his death in 1874.

Journal of a Voyage from Boston
To France In The Letter of
Marque Brig Argus Harry Parsons, Esq. Com.
By Micajah Lunt jun.
Letter of Marque Brig Argus
of 8 guns & 31 men

Above is the first page of a journal kept by Micajah Lunt, son of Micajah Lunt of Newburyport in 1813 when at the age of seventeen he made his first voyage as supercargo on the brig, of which his father was owner or part owner.

Micajah studied navigation in his father's 'counting room' on Ferry Wharf in Newburyport. The journal is largely concerned with careful calculations of latitude and longitude and 'Remarks' on the weather and the management of the brig.

He begins 13 February 1813: 'Cast off from Johnson's Wharf at 9 o'clock bound for Boston. At half past ten went through the Bar with a pilot on board. At once sprung up a gale from the southward and westward. Stood in for Cape Ann. Through the negligence of some of our people we mislaid and laid to for the night.' The next day they stood in for Cape Ann, the wind not proving fair enough to go to Boston. At six o'clock they went into Cape Ann with bare poles at the rate of six knots. On the fifteenth the wind was still unfair but at twelve o'clock at night they got underway for Boston where they arrived at seven o'clock the next morning, where they hauled in and made fast at India Wharf. On the seventeenth they cast off from India Wharf and hauled over to Long Wharf for the purpose of taking in cargo, which seemed to consist of fish from Cape Ann, cotton, and the King of Denmark's 'bale goods.'

During the month the brig was in Boston there seem to have been difficulties with the crew. On 22 April Micajah writes that 'Mr. Stevens and Mr. Couch went to Newburyport, the latter with frozen fingers.' On 5 April 'Daniel' (who was Mr. Stevens' son) 'went on shore with the Boat and two men to fetch his father's things off but some difficulty arising he came on board and took his own and his father's things and left the vessel.' On the sixth 'Mr. Stevens went on shore and came off looking pretty Sulky,' and the next day he went on shore again and Returned and took out his things and left the vessel. On the same day 'Mr. Allen went to Newburyport. Our people very uneasy.' Some other men left the vessel and on 9 April, 'Our people in confusion, some gone to Newburyport and some in goal.' On the eleventh they were shipping the people anew and getting ready for sea. Meanwhile 'Capt. Parsons came from Newburyport to go in the vessel in lieu of Capt. Farley.'

While the brig was in Boston the frigate *Constitution* arrived, having taken *Java*. Micajah was sent on board another prize ship, *Neptune*, to take an inventory.

On 13 March at 4 P.M. *Argus* 'hove to and proceeded to sea with a fair wind, passing the Boston Light House at 6 o'clock.' At 8 P.M. they saw '2 sail standing to the North.'

They apparently saw no other sails during the voyage until on 2 April when 'the day began with fresh gales and cloudy. At 3 P.M. the man at masthead discovered Two sail upon our weather bow. Soon after made them to be a convoy of merchantmen of about fifty sail under convoy of two frigates and a Gun brig, two of which gave us chace, but we left them far astern. At four P.M. discovered another sail and another to windward but we soon left them far behind. 'Twas all in vain.' Later on that day they discovered that 'the brig leaks badly.'

From then on Micajah's 'Remarks' concern only the weather, hauling and reefing sails, calculations of latitude and longitude, and calling all hands to quarters to exercise the guns. The Remarks end each day with the number of miles made by the brig—the lowest being 11, and the highest 263.

On the nineteenth Micajah wrote, '5 of our people sick—2 with the Hill disorder.' 5 April at 5 o'clock, 23 days after leaving Boston they 'discovered Nantes 15 miles distant; at one entered the mouth of the River Loire and with the Emperer's Pilot and at 6 o'clock came to an anthor at Painbeouf 30 miles below Nantes. At 7 the Harbor Master came on board.' On the sixth the 'Searchers and Custom House officers came on board and the Captain went onshore' and the next day, 'Custom House officers

came again and 2 soldiers & the Capt. on shore entering the vessel.' Finally on 9 April a 'Lighter came alongside and we discharged part of our cargo.

On Sunday, the eleventh, they had liberty to go on shore. Micajah purchased clothes, etc., and was apparently shocked to find, 'The People here pay very Little Regard to the Sabbath.' From then on there are only records of discharging cargo and the arrival and departure of American ships. 'The Schooner *Sabine* arrived in 30 days from Baltimore was chased several times on her passage, took an English brig and Burned her.'

They went on discharging cargo until 17 April. On this day Micajah writes: 'Pleasant weather. The soldiers after the officers had come on board, began search and after Searching and Rummaging everything went off on shore. God send they may not come out again.'

The crew then began painting and coppering the ship and Micajah apparently had more liberty. He went on shore 'to see Bona's new Frigates' and to a fair at a little village a few miles from Painbeouf and nearly every day to school —probably with the object of learning French.

On the twenty-seventh 'a Pilot came on board and we hauled in and moored under the town.' The next day 'another Pilot came on board and moored us farther out, we laying very badly.' The American schooner *Flash* came down from Nantes and sailed on 11 May for home. On 18 May they heard of the capture of *Flash* by a 74 in the bay, one day out. On 10 May a marlin spike fell from aloft and hurt one of the people badly. There was apparently a doctor on board as Micajah writes of the captain and the doctor going on shore.

Micajah continued going on shore to school and on Sundays took 'agreeable walks in the country.' On 3 June when he returned from school he found that 'Mr. Allen had received a letter from the Captain for me to come up and take account of the cargo and delivering, accordingly I am getting ready.' The next day 'set out in the passage boat for Nantes where I arrived at 12 o'clock at night, went to the Captain's Lodgings and laid for the night at the Hotel de France.'

On the fifth, for some reason—possibly expense—he removed his lodgings to the Bangas Hotel and then began going to the 'Depot' and took account of 750 kilograms of indigo. He stayed at his lodgings with 'nothing doing this day' for several days, but he went to the play and walked around the city with another young supercargo of *Volunteer*.

13 June he records discharging 'Stockfish' or codfish for Bordeaux and this went on for eight days. On the twenty-fourth the crew began coppering the brig at Painbeouf 'myself doing nothing but roving about in Nantes.' He had been ordered to stay at Nantes until the captain returned from Painbeouf, but on the twenty-eighth he 'set out from Nantes in the passage boat at 7 o'clock and arrived at Painbeouf at one o'clock. The Boat had 26 women passengers,' besides himself and two officers.

On 4 July three French gentlemen came on board and 'drunk a glass of wine with us. We went on board the schooner *Sabine* with the rest of our officers and the other officers in port where we partook of an excellent dinner, and everything was conducted without any harm during the day, except one of our Boys breaking five gendarmes swords.' What follows is difficult to decipher but it looks as if *Argus* fired some guns.

12 July they began taking in cargo but he does not say what, and 18 July *General Armstrong* came up from St. Nazaire, and the schooner *Brutus* arrived from Boston in twenty-five days. Took two British brigs on her passage, one of which was burned and ransomed for 4,000 pounds sterling. On 23 July a lighter came down from Nantes with 81 'pipe brandy' for them but the weather so bad they could not take it in. A news-

paper account states that *Argue* took three merchantmen on this voyage, but if so it must have been on the way home, as Micajah evidently got tired of writing the journal and it ends abruptly on 28 July 1813.

Contributed by Katharine M. Dodge

The Original Cost of an Antoine Roux, Sr., Water Color

In 1815 Ephraim Emmerton sailed from Salem on Joseph Peabody's ship *Francis* as supercargo. His journal of the voyage to the Mediterranean is owned by the Essex Institute and a fine Antoine Roux, Sr., water color of the ship was presented some years ago to the Peabody Museum of Salem by Emmerton's descendants. When the Museum published a full-size, hand-colored reproduction of the painting in 1955, no mention of the original painting could be found in the Emmerton journal, but recently a manuscript list of his personal purchases in Marseilles has been found. While the dress clothing of a supercargo is not without interest, particularly for comparative purposes, the last item on the list is of real importance: it gives what is believed to be the first record so far found of the 'prime' cost of a Roux as delivered to a customer. Most of us today would be delighted to trade four hats or a very fine pair of pants for a Roux, even unframed.

List of Clothing and other articles purchased at Marseilles

1 Sertout & trimming & making	f 98
1 Blue super fine Broadcloth Coat	125.–
1 Pair super fine casimer Pantaloons	50.–
1 Pair fine ditto	36.–
1 Waistcoat Yellow Casimer	18.–
1 Pair Short Boots	28.–
1 Pair Shoes	7.–
1 Hat & Case	16.–
1 Pair silk Stockings	7.–
3 Neck Handkerchiefs Cotton & silk	6.75
2 Mill Caps	4.–
	f 395.75
1 Small Hat for J I E	9.–
11 Fancy Baskets	20.–
1 Bonbon	6.–
3 pair Gloves	10.50
1 Gilt Frame painting ship Francis	36.–
	477.25

Contributed by M. V. Brewington

The Press Gang in China

The immediate cause of the War of 1812 was, of course, the impressment of seamen from American vessels by the British navy. The majority of the publicized outrages took place in the Atlantic and it is not generally realized that similar events happened wherever a British man-of-war could intimidate an American merchant skipper. Witness an affair in China in 1805 when an officer of one of His Britannic Majesty's brigs boarded the merchant ship *New Jersey*, Captain Cooper, owned by John Craig of Philadelphia. The originals are in the William Jones Papers at the Historical Society of Pennsylvania.

Edward Carrington, U. S. Commercial Agent to Captain William Jones.

Canton 15th October 1805.

Dear Sir—

After you left this, I call'd on all the Security Merchants and desired them to meet at my House at 4 o'clock this afternoon, they all attended, excepting Ponkiqua and Mowqua, who excused themselves as they did not Secure at present any American Vessel—

I invited the American Gentelmen to attend, and after they and the Merchants had assembled, I explained to them the cause of my calling them together, they seem to understand the thing perfectly, and Shew much disposition, to grant their aid to obtain a redress of our Complaints—

After the Merchants left me, they went to the English Factory and have since informed me, they would communicate further with me tomorrow—I explicitly informed the Merchants, of the determination of the Commanders of the American Ships, to resist by Force, any attempt to take their Men, and that if occassion required they would certainly make use of their Guns, for protecting their Ships—and should any accident befall the Chinese or Foreigners, it must not be complained of against the American Nation as an improper act on their part, they did not appear to approve of the Fighting part, but I am pursuaded they will not be disappointed, if the Guns are made use of in protecting the Vessels—

I am in haste,
Yours respectfully
Edwd. Carrington.

I hear Captn. Philips has an English Sailor onboard the Ganges that deserted from Macao; if so, he had better discharge him from the Ship let him come off in a China Boat and take his own way—if any of the other vessels have any

persons onboard that they know to be deserters they aught not to be kept onboard—

E Carrington

11 o'clk.

Memorandum by Captain William Jones to Edward Carrington, U. S. Commercial Agent.

Thoughts on the proper course to be pursued by the Americans in relation to the outrage committed onboard the Ship New Jersey by the British Kings Brig at Whampoa—

1st Proper depositions of the Officers of the New Jersey should be taken by our Coml Agent stating the facts and manner in which they entered the ship and took the Seaman.

2. A letter should be addressed by our Commercial Agent to the Commander of the Brig stating the facts and expressing a confidence that he will immediately repair the injury by returning the man to the New Jersey.

3. If this letter should fail to produce its effect another official letter should be addressed to him couched in energetic terms representing the unlawfulness of the act the indignity offered to our flag, and to the Government within whose territory the Act was committed demanding in the name of the United States the surrender of the man and in the event of refusal declaring that a formal appeal will made [*sic*] by the Agent to the Chinese Government supported by all the Americans here and a proper representation of the outrage to our own Government—

4th. Should this also prove ineffectual

a Memorial in due form should be drafted and addressed to the governor of the Province and an application made by the Agent and Super Cargos in a body to their several Hong Merchants soliciting permission for a deputation to enter the City and present the Memorial—

As a faithful translation cannot be obtained an explanation of its contents should be as correctly made as possible to the Hong Merchants and Linguist who should be requested to commit it to paper in their own language and not trust to memory alone—

If these measures were pursued with porpriety and Spirit I have no doubt of the assent and support of the Chinese Government and a precedent might be established of great importance to the interests of the American Commerce hereafter—

In any event proper representations should be made to our own government of the whole proceedings—

In the interem it ought to be the unaminous and absolute determination of the American Captains first to resist by firm & cool remonstrance and ultimately to repel by force of Arms any attempts of the kind in the future—

Contributed by M. V. Brewington

Heaving Down *Constitution*

The following appeared in the *Federal Gazette* of Baltimore, 24 June 1803.

Constitution Frigate. Boston, June 18

On Thursday last, the novel and interesting operation of heaving down the Constitution for the purpose of recoppering her, was performed here under the direction of Commodore Preble. The preparations for this experiment evince his judgement, intelligence and enterprize. This stout ship was hove down, by a purchase leading from the main and fore-mast heads, to Colonel May's wharf, which had previously been prepared for the purpose:—Each mast had been strengthened by two oak fishes; and in addition to the shrouds, they were supported by five careening pendants at the main, and four at the foremast heads; set upto as many out-riggers secured by gammoning to bolts in the ship's bottom. This operation has been performed without either straining the ship, or parting a rope yarn, although we learn from conversation with those acquainted therewith, that owing to the construction of the ship, she heaves down harder than a ship of the line. The workmen commenced recoppering on Thursday morning, when her keel was hove out, and her larboard side was completed yesterday afternoon. The copper is from the furnace of Colonel Revere, at Canton. It is the first ever manufactured in the United States, and will not suffer by comparison with the best sheets imported.

Contributed by M. V. Brewington

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BY LEIGHTON SHIELDS, JR.[1]

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Abbreviations: *D&HA, Dock and Harbour Authority; MCF, Maine Coast Fisherman; RUSI, Journal of the Royal United Service Institution; SBF, Steamboat Bill of Facts; S&S, Ships & the Sea; USNIP, United States Naval Institute Proceedings.*

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ROGHI, GIANNI, & BASCHIERI, FRANCESCO, *Dahlak*, 280 pp. 25*s*. London, Nicholas Kaye. The experiences of the Italian Underwater Expedition in the Red Sea in 1952-53.

SCANLAN, MARION S., *Trails of the French Explorers*, 79 pp. $2.50. San Antonio, Naylor Co. On Marquette and Joliet.

SEYMOUR, JOHN L., The Gulf Stream, 4 pp. *Motor Boating*, Oct.

SKELTON, R. A., Explorers' Maps (XIII) The Rivers of Africa, 14 pp. *Geog. Mag.*, July.

——— Explorers' Maps (XIV) The Polar Regions in the 19th Century, 14 pp. *Geog. Mag.*, Aug.

VILLIERS, ALAN, *Pioneers of the Seven Seas*, 220 pp. 16*s*. London, Routledge & Kegan Paul. From Pharoah Sahu-Re through the great pioneers of the fourteenth century to the present.

III. *Merchant Sail and General Shipping—North America*

DAVISON, ANN, *My Ship is So Small*. 16*s*. London, Peter Davies. Alone across the Atlantic in a 23-foot sloop.

ETHERIDGE, HARRY, Abaco Adventure, 5 pp. *Yachting*, Nov. Cruising along the Little Bahama Bank. An article to be continued.

GRAHAM, IAN C. C., *Colonists from Scotland: emigration to North America: 1707-1783*, 233 pp. $4.50. Ithaca, Cornell Univ. Press.

HALLET, RICHARD, Sir William Phips, 5 pp. *Down East*, Sept.

KANEKO, HISAKAZU, *Manjiro, the Man Who Discovered America*, 156 pp. Boston, Houghton.

LAURENCE, FREDERICK S., Stormy Passage to Portland, 6 pp. *Down East*, Sept. Aboard the four-masted schooner 'Sarah C. Ropes' carrying Norfolk coal to Portland in 1897.

LEDER, LAWRENCE H., & CAROSSO, VINCENT P., Robert Livingston (1654-1728): Businessman of Colonial New York, 28 pp. *Business Hist. Rev.*, March.

LOOMIS, ALFRED F., *The Hotspur Story*, 227 pp. 15*s*. London, Lutterworth Press. Cruising in the Aegean and the west coast of the U. S.

LOOMIS, DON, Down East By Dory, 5 pp. *Down East*, Sept. The Maine coast, Cape Breton Island.

MELLOR, GEORGE R., Emigration from the British Isles to the New World, 1765-1775, 16 pp. *History*, Feb. & June 1955.

OSTRANDER, GILMAN N., The Colonial Molasses Trade, 8 pp. *Agricultural History*, April.

PARRY, J. H., Eliphalet Fitch: A Yankee Trader In Jamaica During the War of Independence, 15 pp. *History*, Feb. & June 1955.

——— & SHERLOCK, P. M., *A Short History of the West Indies*, 316 pp. 18*s*. London, Macmillan. This is likely to become the standard work on the subject for some time.

ROBERTSON, M. C., Scottish Commerce and the American War of Independence, 9 pp. *Econ. Hist. Rev.*, Aug. Discusses the disastrous impact of the American Revolution and its relation to the redirection of the Scottish economy.

TAYLOR, PHILIP A. M., Mormons and Gentiles on the Atlantic, 20 pp. *Utah Hist. Quar.*, July. Mormon emigration from Europe to America.

WARINNER, EMILY, *Voyager to Destiny*, 267 pp. $4.00. Indianapolis, Bobbs-Merrill. Biography of the Japanese Manjiro, who was rescued by a New England whaler off Alaska in 1831 and brought to America.

IV. *Merchant Sail and General Shipping—Other Regions*

And Bends the Gallant Mast, 11 pp. *The Three Banks Review*, Sept. Wm. Deacon's bank, the East India Company and trade to India and China in the late eighteenth century.

ANDERSON, F., A Poet's Fortune, 4 pp. *Sea Breezes*, Aug. Experiences of John Wordsworth (brother of William) with the East India Company on 'Earl of Abergavenny.'

ANDREW, C. K. CROFT, Wreck of the 'Postilion,' 1732, 5 pp. *Devon & Cornwall Notes & Queries*, July. A vessel plundered by Cornishmen.

ANDREWS, J. H., Two Problems in the Interpretation of the Port Books, 4 pp. *Econ. Hist. Rev.*, Aug. An important article which shows that various kinds of trade were deliberately omitted

and that a particular harbor could be recorded in more than one port book. The work of T. S. Willan and others must stand revision.

BOVILL, E. W., Some Chronicles of the Larkins Family. The Loss of the Warren Hastings, 1806, 13 pp. *Mariner's Mirror*, Aug.

BOWEN, RICHARD LEBARON, JR., The Earliest Lateen Sail, 4 pp. *Mariner's Mirror*, Aug. Argues for the early appearance of the lug sail and the evolution of the lateen from the lug.

——— European 'Sewn' Boats, 3 pp. Ibid.

CALDWELL, JOHN, *Family at Sea*, 316 pp. $4.50. Boston, Little, Brown. The voyage of a family from Los Angeles to Australia in a 36-foot boat.

CASTLE-SMITH, G. M., Antwerp-'Frisco—193 Days, 4 pp. *Sea Breezes*, Aug. A voyage on the four-masted steel bark 'Port Stanley' in 1950.

DAVIS, RALPH, Merchant Shipping in the Economy of the Late Seventeenth Century, 15 pp. *Econ. Hist. Rev.*, Aug. The demands of trade for shipping services and those influences which promoted the expansion of the shipping industry.

DE CERVIN, G. B. RUBIN, The Evolution of the Venetian Gondola, 18 pp. *Mariner's Mirror*, Aug.

DE KERCHOVE, R., The English Dogger, 1 p. Ibid. A brief note on its measurements.

(GILBOY, BERNARD), *A Voyage of Pleasure: The Log of Bernard Gilboy's Transpacific Cruise in the Boat Pacific, 1882-83*, Ed. John B. Tompkins. $3.00. Cornell Maritime Press.

GORSKY, BERNARD, *Moana (Vastness of the Waters)*, 239 pp. 18s. London, Elek Books. A forty-foot cutter, three Frenchmen and a Polynesian with diving and underwater photography as an object from Tangier via the West Indies to the South Pacific.

GRAHAM, CAPT. A. G., Voyage in a Square-Rigger, 4 pp. *Yachting*, Nov. The West Coast to Australia.

GRAHAM, GERALD S., The Ascendency of the Sailing Ship 1850-85, 15 pp. *Econ. Hist. Rev.*, Aug. An important, provocative article.

HITCHCOCK, CONSTANCE, Across the Trades From Tahiti, 4 pp. *Rudder*, Oct. Tahiti to the Hawaiian Islands in a ketch.

JOHNSON, IRVING & ELECTA, *Yankee's Wander-World*, 21s. London, Hale. Eighteen months and 40,000 miles around the world in a former German North Sea pilot schooner.

KEARNEY, H. F., The Irish Wine Trade, 1614-15 (Select Documents XVI). *Irish Hist. Studies*, Sept. 1955.

KING-WEBSTER, W. A., Humber Sloops and Keels, 4 pp. *Mariner's Mirror*, Aug.

LOOMIS, A. F., see Sect. III.

MEYER, CAPT. CARL, The Last of the 'Posen,' 4 pp. *Sea Breezes*, Oct. The burning of the flying P liner in the South Pacific.

NEWBY, ERIC, *The Last Grain Race*, 310 pp. $4.00. Boston, Houghton. 1938 is the date for this fictional voyage of a grain ship from Australia to Europe.

NOBLE, A. H., *Three Ships Came Sailing*, 18s. London, Hutchinson. A good description of life at sea in the late nineteenth century.

ÖHBERG, ARNE, Russia and the World Market in the Seventeenth Century, 40 pp. *Scandinavian Econ. Hist. Rev.*, Vol. III, No. 2, 1955. The relation between prices and trade routes.

PYLE, EDWIN, Cutty Sark, 5 pp. *Motor Boating*, Nov.

ROACH, PETER, *Voyage in a Barquentine*, 272 pp. $2.25. (Mariner's Library 32) Fairlawn, N. J., Essential Books. First published four years ago. The vessel is 'Cap Pilar.'

ROËRIE, L. GUILLEUX LA, Fore and Aft Sails in the Ancient World, 2 pp. *Mariner's Mirror*, Aug. In a brief note, the author argues against the early use of the lateen sail.

ROGERS, P. G., *The First Englishman in Japan*, 143 pp. 12s 6d. England, Harvill Press. Biography of Will Adams, English pilot, who landed in Japan in 1600.

SAMUELSSON, KURT, International Payments and Credit Movements by the Swedish Merchant-Houses, 1730-1815, 40 pp. *Scandinavian Econ. Hist. Rev.*, Vol. III, No. 2, 1955.

SCHURMANN, HERBERT FRANZ, *Economic Structure of the Yüan Dynasty: Translation of Chapters 93 and 94 of the Yüan Shih*, 252 pp. $3.50. Cambridge, Harvard Univ. Press. Includes material on foreign and maritime trade.

STONE, LAWRENCE, *An Elizabethan: Sir Horatio Palavicino*. 45s. London, Oxford Univ. Press. Career of a Genoese merchant who became a member of the English landed gentry.

STORM, E. B., The Last Days of Sail at Sydney, 5 pp. *Port of Sydney Jour.*, April-June.

VAN LEUR, J. C., *Indonesian Trade and Society: Essays in Asian Social and Economic History* (Selected Studies on Indonesia by Dutch Scholars, Vol. I), 465 pp. $4.00. The Hague, W. van Hoeve, distributed by the Institute of Pacific Relations, New York, 1955. The section on the 'World of Southeast Asia: 1500-1650' has material on trade routes and commerce.

(WATT, RICHARD), Second Cabin Passage, 11 pp. *Sea Breezes*, Aug. Concluding an account begun in an earlier issue.

WILLIS, WILLIAM, *The Epic Voyage of the Seven Little Sisters*, 244 pp. 16*s*. London, Hutchinson. From Callao to Samoa on a log raft for 6,700 miles.

WINCHESTER, BARBARA, *Tudor Family Portrait*, 330 pp. 1955. London. An account of Johnson & Co., Merchants of the Staple.

WINTER, L. B., *We Who Adventure*, 188 pp. $3.40. London, Oxford Univ. Press. Sailing along the English and Scottish coast.

WORCESTER, G. R. G., Notes on the Canoes of British Guiana, 2 pp. *Mariner's Mirror*, Aug.

V. *Fisheries and Whaling*

ALLEN, EDWARD W., Fish Can Be International, 6 pp. *USNIP*, Oct.

ALLISON, CAPTAIN IVAN, *The Deep-Sea Fisherman*. 6*s*. London, Educational Supply Association. Trawlers, fish and fishing methods.

BOHME, FREDERICK G., The Portuguese in California, 20 pp. *California Hist. Soc. Quar.*, Sept. The early settlers were connected with whaling and fishing.

DE BAER, OLIVER, Arctic Trawl, 12 pp. *Geog. Mag.*, Sept. A voyage aboard 'Northern Princess.'

GERHARD, PETER, Pearl Diving in Lower California, 1533-1830, 12 pp. *Pacific Hist. Rev.*, Aug.

GORDON, BERNARD, The Tuna, 1 p. *MCF*, Nov.

HAMMOND, WALTER, *Mutiny on the Pedro Varela*, 87 pp. $2.00. Mystic, Conn., Marine Hist. Assoc. A twentieth-century incident on the New Bedford whaling schooner.

Rhode Island Trap Fishing, 2 pp. *MCF*, Oct.

ROBERTSON, R. B., *Of Whales and Men*, 247 pp. 21*s*. London, Macmillan.

ROBINSON, H., The Chinese Fishing Industry, 9 pp. *Geography*, July.

SMITH, JAMES L. B., *The Search Beneath the Sea*, 260 pp. $3.95. New York, Holt. The hunt for the coelacanth.

SWANSON, EARL H., Nootka and the California Gray Whale. *Pacific Northwest Quar.*, April.

TUTEIN, PETER, *Love in Unfamiliar Places*, 191 pp. 16*s*. London, Elek Books. In spite of the title, there is much information here about trapping and sealing in the White Sea.

VIa. *Merchant Steam, North American and General*

BONSOR, N. R. P., *North Atlantic Seaway*, 639 pp. $8.50. Prescot, Lancashire, T. Stephenson & Sons Ltd. A history of passenger lines from Europe to North America in the age of steam with an index of over 3,500 ships.

BUCHANAN, LAMONT, *Ships of Steam*, 192 pp. $5.95. New York, McGraw-Hill. A fine pictorial survey with notes from the eighteenth century to the present.

DALLETT, F. J., JR., The Steamers of the Red D Line and Associated Firms, 1854-1937, 2 pp. *SBF*, Sept. Includes a fleet list.

GREENE, MARC T., The Old Sidewheelers, 3 pp. *Down East*, July.

HARDING, ADDIE CLARK & ESKEW, GARNET LAIDLAW, *America Rides the Liners*, 283 pp. $6.00. New York, Coward-McCann.

HOWARTH, C. E., The Happy 'Hessle,' 3 pp. *Sea Breezes*, Sept. A steward's voyage in 1884 from England to the U. S. and back.

INNES, HAMMOND, *The Wreck of the Mary Deare*. $3.75. New York, Knopf. A novel.

New Type of Bulk Carrier, 1 p. *Shipping and Transport*, Oct. The new MS 'Bishopsö' to transport coal, ore and grain on fixed routes.

Operating-Differential Subsidies, 6 pp. *Marine News*, Sept.

RINGWALD, DONALD C., Twilight of the Walking Beam, 7 pp. *S&S*, Winter 1957. Mainly about 'Robert Fulton' of the Hudson River Day Line.

TATTERSALL, CAPT. CHARLES, Burning of the 'Brookland,' 2 pp. *Sea Breezes*, Oct. The vessel was a wooden steamer built in Aberdeen, Washington, during the First World War.

West Coast Route (1 & 2). 16 pp., 27 pp. *Sea Breezes*, Aug., Sept. The Pacific Steam Navigation Company. The article has a fleet list.

YELLOTT, JOHN I., Captain John Ericsson: Pioneer in Solar Energy, 8 pp. *The Sun at Work* (Newsletter of the Association for Applied Solar Energy), Sept. To be continued.

VIb. *Merchant Steam, Other Regions*

ADAM, CONTRE-AMIRAL M., FN, Compagnie des Chargeurs Reunis, 31 pp. *Sea Breezes*, Oct. The second article in the series, with a fleet list.

ARGYLE, E. W., Charles Tellier and the 'Frigorifique,' 2 pp. *Sea Breezes*, Sept. Tellier was the Frenchman who was responsible for the first meat cargo shipped through the tropics under refrigeration in 1877.

Captain R. H. A. Bond, O.B.E., and the 'Nevasa,' 4 pp. (A Master and His Ship Series.) *Sea Breezes*, Sept. The British India Steam Navigation Co. Ltd. was the owner.

BONSOR, N. R. P., The Cunarder Persia, 3 pp. *Marine News*, Sept. The second in a series on North Atlantic Lines deals with the vessel built by Napier and launched at Glasgow in 1855.

DE HARTOG, JAN, *A Sailor's Life*. 18*s*. London, Hamish Hamilton. The author's experiences in the Dutch merchant navy.

DODMAN, FRANK E., General Cargo for the Hebrides, 4 pp. *Trident*, Sept. Aboard the cargo motorship 'Loch Ard' for ten days in the Hebrides.

DUNN, LAWRENCE, *The World's Tankers*, 175 pp. $6.95. New York, John de Graff.

EDWARDS, CAPT. H. W., RN, *Their Lawful Occasions*. 15*s*. London, Percival Marshall & Co. A continuation of the author's autobiography begun with his 'Under Four Flags.'

FARR, GRAHAME E., *West Country Passenger Steamers*, 327 pp. 25*s*. London, Richard Tilling. A detailed history of the steam packet lines in the Bristol Channel and Irish Sea.

From the 'Cape of Good Hope' to the 'Nevasa,' 3 pp. *Shipbuilding and Shipping Record*, 4 Oct. The British India Steam Navigation Co.

HARVEY, JACK, *Beyond the River's Mouth*. 10*s* 6*d*. London, Cassell. A fictional account of life aboard a coal burning tramp during the 1920's and 1930's.

HENDERSON, A., 'Coriolanus's' Career, 1 p. *Sea Breezes*, Aug. Summary of the Dumbarton-built vessel's career.

KING, G. A. B., *Tanker Practice*. 30*s*. London, The Maritime Press. An ABC of tanker work by a deck officer.

ISHERWOOD, J. H., A 'Castle' of the Eighties, 3 pp. (Steamers of the Past series.) *Sea Breezes*, Aug. 'Roslin Castle.'

——— The 'Himalaya': A Notable Pioneer, 5 pp. (Steamers of the Past.) *Sea Breezes*, Sept. The P & O vessel.

——— White Star Liner 'Suevic,' 4 pp. (Steamers of the Past.) *Sea Breezes*, Oct.

KENDALL, COL. LANE C., The Norwegian Merchant Marine Since 1945, 24 pp. *USNIP*, Sept.

KERR, JOHN, Odd Wee Craft that Make Money for the Clyde Shipbuilders, 7 pp. *Scotland*, Aug.

The Mercantile Navy List and Maritime Directory 1955, 1672 pp. $18.90. London, H.M.S.O. Contains a list of the 38,000 vessels registered at ports in the U. K. and the Commonwealth.

Motorship with air-cooled auxiliaries, 6 pp. *Marine Engineer & Naval Architect*, July. The motor coaster 'Amber' of Glasgow.

Norway's Flagship, 12 pp. *Marine Engineer & Naval Architect*, Aug.

PALTRIDGE, SENATOR SHANE, Australian Shipping and Shipbuilding, 5 pp. *Marine News*, Sept.

PURSELL, G. H., Ships of the Isle of Man, 4 pp. *Trident*, July.

REES, HENRY, The Shipment of Petroleum to and from the Ports of the United Kingdom, 5 pp. *Scottish Geog. Mag.*, Sept.

SAYLE, COMDR. A. R. W., RNR, Cargo Ship Status, 4 pp. *Sea Breezes*, Aug.

SMITH, ROLAND, The Manchester Chamber of Commerce and the Increasing Foreign Competition to Lancashire Cotton Textiles, 1873-1896. *Bull. John Rylands Library*, March.

'Spyros Niarchos,' 3 pp. *Marine News*, Sept.

'Spyros Niarchos,' 47,750 tons d.w. tanker, 8 pp. *Marine Engineer & Naval Architect*, July.

TETLOW, STEPHEN, Atlantic Elder, 5 pp. *Sea Breezes*, Oct. The old 'Panthia' (1870) and 'Hecla' (1860).

——— Identical Twins, 6 pp. *Sea Breezes*, Aug.

VILLIERS, ALAN J., *Posted Missing*, 320 pp. $4.75. New York, Scribners. Stories of ships officially posted missing by Lloyd's of London.

WHITNEY, RALPH E., Sea Queens in Exile, 6 pp. *SBF*, Sept. A reprint of an earlier article (1941) on ex-German merchant vessels.

VII. *Inland Navigation*

AREND, MARTIN N., City of Jamestown, The Lone Survivor, 2 pp. *SBF*, Sept.

BEAN, CHARLES E. W., *The Dreadnought of the Darling*, 268 pp. $3.00. S. Pasadena, Cal., P. D. & Ione Perkins. The author, whose book was first published in 1911, writes of experiences on a steamer in the interior of Australia.

C.A.M.A.S., Canals of the North-West, Part II, 3 pp. *Marine News*, Sept. Notes on English canals.

CUMMING, GEORGE A., The Upper Mississippi Waterway, 8 pp. *Scottish Geog. Mag.*, Dec. 1955.

EWEN, WILLIAM H., The Robert Fulton Passes, 2 pp. *SBF*, Sept. The Hudson River Day Line vessel.

GAMBLE, JAY M., Up River to Benton. *Montana Mag. of Western Hist.*, April.

HADFIELD, JOHN C. H., *The Canals of Southern England*, 383 pp. $8.50. Hollywood-by-the-Sea, Fla., Transatlantic Arts.

HORROCKS, AMOS W., The Delaware and Raritan Canal, 2 pp. *New Jersey Outdoors*, April.

MCDONALD, WILLIAM A. (ed.), Eye Witness Reports of the Burning of the Niagara, 8 pp. *Inland Seas*, Fall.

New York State Barge Canal System, 4 pp. *Via Port of New York*, Sept.

NEWICK, RICHARD C., Water Wandering in Denmark, 4 pp. *Rudder*, Oct.

——— Water Wandering in the Low Countries, 5 pp. *Rudder*, Sept.

PATTON, DONALD, The Traffic Pattern on American Inland Waterways, 9 pp. *Econ. Geog.*, Jan.

ROBSON, JAMES, The Clyde Pleasure Steamers, 1939-1955, 4 pp. *Trident*, Aug.

SCOTT, MEREDITH A., Last Lakers Through the Locks, 8 pp. *S&S*, Winter 1957.

WILLOUGHBY, WILLIAM R., The Impact of the Erie Canal, 6 pp. *Niagara Frontier*, Summer.

——— The Inception and Financing of the First Welland Canal, 12 pp. *Inland Seas*, Fall.

WILSON, LOUDON, Navigation North and West, Part II (14th article), 3 pp. *SBF*, Sept. Continues the story of steamers on Lake Winnipeg.

VIIIa. *Seaports and Coastal Areas, North America*

BLACKBURNE, SIR KENNETH, English Harbour, Antigua, 7 pp. *Corona*, Jan.

CHEVRIER, LIONEL, The Seaway in the Canadian Economy, 5 pp. *Dalhousie Review*, Autumn.

CUMMING, R. STANLEY, The St. Lawrence Seaway and Nova Scotia's Economy, 18 pp. Ibid.

GRANBERG, W. J., Tacoma: Lumber Port on an Inland Sea, 6 pp. *S&S*, Winter 1957.

LOWE, DONALD V., Brooklyn-Port Authority Piers, 2 pp. *Marine News*, Oct.

Port of Toledo, 7 pp. *World Ports*, Sept.

RAPP, MARVIN A., Buffalo's First Harbor, 11 pp. *Inland Seas*, Fall.

RIPLEY, D. M., The St. Lawrence Seaway and Power Project, 7 pp. *D&HA*, Oct.

The State Ports of North Carolina, 4 pp. *World Ports*, July.

STEVENS, STEVE, Los Angeles, 4 pp. *World Ports*, Oct.

VIIIb. *Seaports and Coastal Areas, Other Regions*

ATKINSON, G. L., The Port of Blyth, Northumberland, 6 pp. *D&HA*, Sept.

BAKER, CAPT. HAROLD E., USN (ed.), Sweden's Sea and Coastal Defence, 6 pp. *USNIP*, Sept.

BEATTY, CHARLES, *Ferdinand de Lesseps*, 334 pp. London, Eyre & Spottiswoode.

CHALONER, W. H., De Lesseps and the Suez Canal, 5 pp. *History Today*, Oct.

COTTON, K. E., The Use of Timber in the Construction of Sea Defence and River Works, 5 pp., 4 pp. *D&HA*, Aug., Sept.

DE CARTERET, ALLAN R., *The Story of Sark, The Island where Time Stands Still*. 16s. London, Peter Owen.

DIETRICH, HERMANN, Oil, Coal and Grain Handling Plant at Iskenderun, Turkey, 4 pp. *D&HA*, Sept.

FISHER, JAMES, *Rockall*, 200 pp. 18s. England, Bles. History of the rocky islet in the North Atlantic.

HAMPSHIRE, A. CECIL, The Navy's Larder, 4 pp. *Trident*, Sept. A brief description of the Royal Victoria Yard, Deptford.

HANCE, WILLIAM A., & DONGEN, IRENE S. VAN, The Port of Lobito and the Benguela Railway, 28 pp. *Geog. Rev.*, Oct.

JARRETT, H. R., Recent Port and Harbour Developments at Freetown, 8 pp. *Scottish Geog. Mag.*, Dec. 1955.

LUTZ, RALPH, The Docks of the Free Hanse Town of Bremen, 7 pp. *D&HA*, Aug. The rebuilding of the docks at Bremen and Bremerhaven after the Second World War.

MCDOUGALL, M. G., The State Dockyard ... Newcastle, 5 pp. *Port of Sydney Jour.*, July-Sept.

MORAN, T. W., The Use of Gunite as a Structural Material, 5 pp., 4 pp. *D&HA*, July, Aug. Includes its use on various English docks.

MORE, JASPER, *The Mediterranean*, 336 pp. $5.75. New York, Hastings.

PIPPAS, D. A., Improvements to the Port of Piraeus, 3 pp. *D&HA*, July.

Port Operation and Information Service at Southampton, 3 pp. *D&HA*, Sept.

ROOKE, G. W., Reconstruction of Fish Quay at Whitby, 5 pp. *D&HA*, Oct.

SAUNDERS, F. O'C., Port of Cork, 7 pp. *D&HA*, July.

SAYERS, JOHN E., The Port of Belfast, 5 pp. *World Ports*, Sept.

SORENSEN, K. G., Reconstruction of a Sea Wall at Beira, 3 pp. *D&HA*, Sept. The second largest port in Portuguese East Africa.

WERNSTEDT, FREDERICK L., Cebu: Focus of Philippine Interisland Trade, 10 pp. *Econ. Geog.*, Oct.

WHITE, H. P., Port Developments in the Gold Coast, 4 pp. *Scottish Geog. Mag.*, Dec. 1955.

IX. *Shipbuilding and Allied Topics*

'ANCAIOS,' New Shipbuilding Berth at Kobe, Japan, 2 pp. *D&HA*, Oct.

Graving Dock, 2 pp. *Marine News*, Sept. The new one of the New York Shipbuilding Corporation.

MARTIN, M. D., Fin Stabilizers for Ships, 6 pp. *Bureau of Ships Jour.*, Sept.

PALTRIDGE, S., see Sect. VIb.

SMITH, F. G. WALTON, & SISSON, ROBERT F., Shipworms, Saboteurs of the Sea, 8 pp. *Nat. Geog. Mag.*, Sept. Excellent photographs in an interesting article.

X. *Naval to 1939—North America*

BUSBY, COMDR. JOHN C., USN, Refinements in Mobile Support, 6 pp. *USNIP*, Oct. A brief comparison of Spanish, British, German and American experience.

William F. Durand, Class of 1880, An Inspiring American, 2 pp. *Shipmate*, Sept. The oldest living graduate of the Naval Academy.

ELIOT, GEORGE F., *Caleb Pettengill, U.S.N.*, 320 pp. $3.95. New York, Julian Messner. This novel has the Civil War as a background.

The First Fifty Years of U. S. Submarines, 14 pp. *USNIP*, Nov. A collection of photographs with brief descriptions.

GIPSON, LAWRENCE H., *The Triumphant Empire, New Responsibilities within the enlarged Empire, 1763-1766*, 434 pp. $7.50. New York, Knopf. Volume 9 in the outstanding series on the British Empire before the American Revolution.

HENSLEY, MATT, The Whipping Boy, 6 pp. *USNIP*, Nov. The rôle of morale.

HINRICHS, DUNBAR M., Captain Kidd and the St. Thomas Incident, 15 pp. *New York Hist.*, July. Kidd at St. Thomas in 1699.

JENRICH, CHARLES H., The Privateer, 3 pp. *Rudder*, Oct. War of 1812.

KOKE, RICHARD J., The Struggle for the Hudson: The British Naval Expedition under Captain Hyde Parker and Captain James Wallace, July 12-August 18, 1776, 61 pp. *New York Hist. Soc. Quar.*, April.

Stephen B. Luce, Class of 1846, Educator of the Navy, Founder of the Maritime Colleges, 4 pp. *Shipmate*, Nov.

MCLARTY, ROBERT N., Jamaica Prepares for Invasion, 1779, 6 pp. *Caribbean Quar.*, Jan. 1955.

MURRAY, ERIC, First Chapter in Caribbean History, 7 pp. Ibid.

Naval Stores Statistics, 1900-1954, 32 pp. *U. S. Dept. of Agriculture*, 25 cents. Washington, D. C., GPO.

QUATTLEBAUM, PAUL, *The Land Called Chicora; The Carolinas under Spanish rule with French intrusions, 1520-1670*, 167 pp. $3.75. Gainsville, Univ. of Fla. Press.

ROWBOTHAM, COMDR. W. B., RN, The British Occupation of the Diamond Rock, 1804-1805, 16 pp. *RUSI*, Aug. The small island off Martinique.

RUTLEDGE, JOSEPH L., *Century of Conflict; The Struggle between the French and British in Colonial America*, 540 pp. $5.00. New York, Doubleday. Volume 2 of the Canadian History Series deals with the period 1672-1769.

STEVENS, JOHN R., H.M.S. 'Tecumseh,' 1815, 7 pp. *Nautical Research Jour.*, July-Aug.

SWARTZ, ORETHA, Historic Annapolis—and the Navy, 2 pp. *Shipmate*, Oct.

TONER, CAPT. RAYMOND J., USN, USF Essex 32, 2 pp. *USNIP*, Oct.

VAN DEURS, REAR ADMIRAL G., USN, And the Navy Got its Wings, 2 pp. *American Heritage*, Oct.

WATTS, ENSIGN HARRY C., USN, Ericsson, Stockton, and the USS Princeton, 8 pp. *USNIP*, Sept.

WHEELER, GERALD E., The Last Day of Captain Cornelius M. Schoonmaker, 2 pp. *USNIP*, Sept.

XI. *Naval to 1939—Other Regions*

ANDERSON, M. S., Great Britain and the Barbary States in the Eighteenth Century, 20 pp. *Bulletin of the Institute of Historical Research*, May.

ANDERSON, R. C., Mediterranean Galley-fleets in 1725, 9 pp. *Mariner's Mirror*, Aug.

BLYTH, E. M. E., Admiral Sir Home Riggs Popham, 6 pp. *The Army Quar.*, July.

BUSBY, COMDR. JOHN C., see Sect. X.

CHURCHILL, SIR WINSTON, Days of Glory, Good Queen Bess, 23 pp. *Life*, 5 Nov. Contains a description of the armada.

——— The New World, 24 pp. *Life*, 29 Oct. Contains some excellent prints of 'A Brave Beginning of the New Navy.'

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